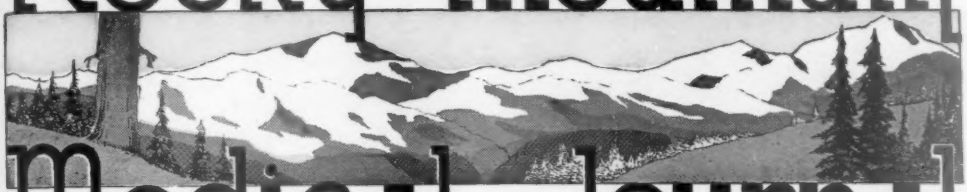
Rocky Mountain Medical Journal



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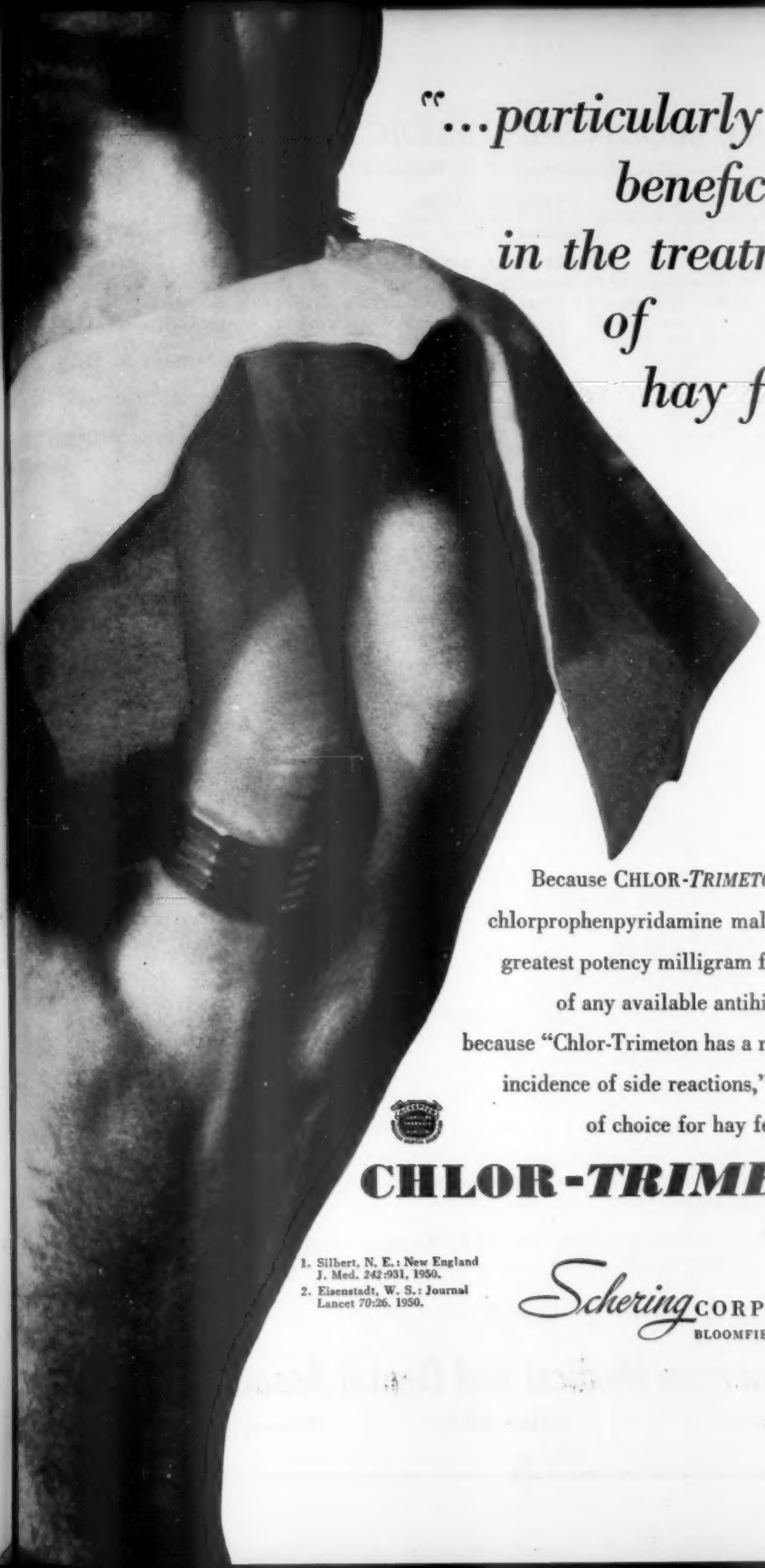

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1. Silbert, N. E.: New England J. Med. 242:931, 1950.
2. Eisenstadt, W. S.: Journal Lancet 70:26. 1950.

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THE COLORADO STATE MEDICAL SOCIETY

NEXT ANNUAL SESSION: STANLEY HOTEL, ESTES PARK, SEPTEMBER 9, 10, 11, 12, 1952.

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*Matthews, J. G.: Care and Healing of Traumatic Wounds. *Northwest Med.*, 50:512, July, 1951

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NEXT ANNUAL SESSION: CARLSBAD, MAY 8, 9, 10, 1952

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NEXT ANNUAL SESSION, SALT LAKE CITY, SEPTEMBER 4, 5, 6, 1952

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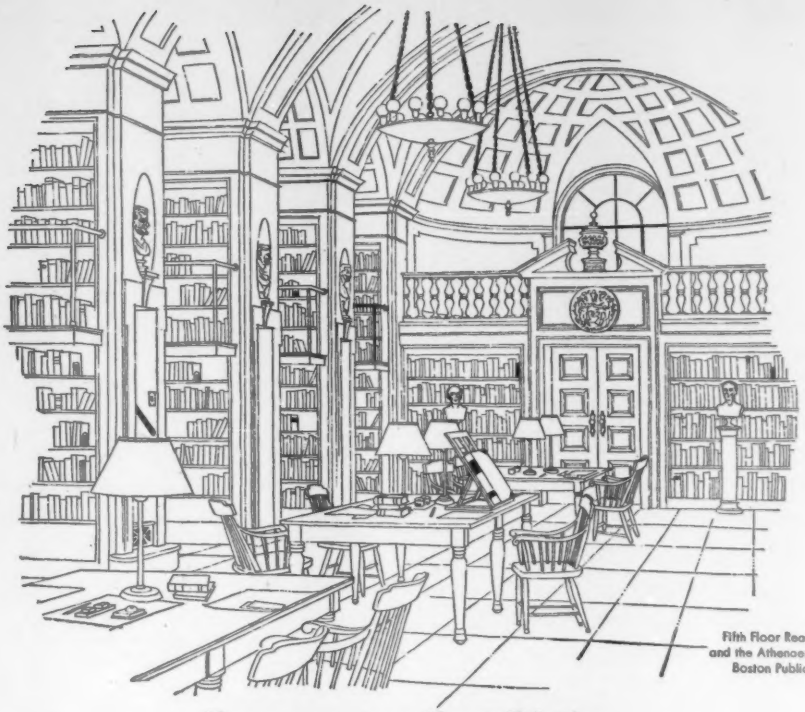

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Alternate: Herbert A. Black, M.D., Parkview Hospital, Pueblo.

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Editorial

Something to Vote About

AMERICAN citizenship may be acquired in the delivery room or the courtroom, but it is fully achieved only in the daily realization of those privileges and duties that give man his rightful place in society. Yet when it comes to voting—the keystone of citizenship—Americans in the past have had a tragic apathy. In 1948 there were approximately 96 million eligible voters in the United States. But in that year, only 49 million—about half of the eligible voters—cast ballots in the presidential election! And the turnout at the polls has been decreasing!

Such a record in America, where free elections protect the rights and liberties of the individual, is more threatening to our freedom than any threat from abroad. In recent elections, according to the Saturday Evening Post (January 12, 1952, pp. 10, 12) the voters in leading countries exercised their right of franchise as follows:

Belgium	90 per cent
Italy	89 per cent
Great Britain	82 per cent
France	75 per cent
Japan	70 per cent
United States	51 per cent

Why are Americans so apathetic? Who do so many of us sit back and "let George do it?" Perhaps it is basically an unawareness of issues.

Japan had a new-found individual freedom when 70 per cent of its voters cast their ballots. France and Belgium had just dropped the Nazi yoke. England turned to Churchill after years of Socialist rule. Italy arose against Communist infiltration. People in those nations really had something to vote about. Americans have something to vote about, too. Daily the issues are growing more clearly defined. The world needs a strong, sure America—and only Americans can keep our nation strong.

Our role is clear, because doctors are citizens, too. Whatever path we want America to take, we citizens at the grass roots must make the choice. We must study the issues. We must decide. We must vote. And as good citizens, we must do everything in our power to see that others register and vote, too—because today we Americans, of all the peoples of the world, have something vital to vote about!

Peace of Mind in Case of Disability

PHYSICIANS everywhere have recently become mindful regarding disability insurance. Perhaps their deliberations have been stirred up by the American College of Surgeons which has sponsored health and accident indemnity for its members. The group policy is underwritten by one of the large indemnity companies which has offered to accept all applicants, provided at least 50 per cent of members apply. Skepticism may be justified in our minds when a company takes "all comers" without physical examination. If the company is liable for many poor risks, somebody has to pay the bill. The policy is non-cancellable—unless the company decides to cancel all of the contracts in the group. And, believe us, they would do so if and when the master contract became unprofitable to them! Perhaps they have never done so in a comparable instance, but that does not mean that it will never occur. We could feel more secure in owning a contract non-cancellable except for non-payment of premium, war casualty, suicide, et cetera. Apparently the plan has met with favor, and response from members of the American College of Sur-

geons indicates that it will succeed. We hope so, and may it last throughout the period of potential need for every colleague who takes it.

The Bulletin of the Milwaukee County Dental Society many months ago printed an article regarding factors that can stop professional men from working — disability, death, and old age. It published a clarification of terms and phrases used in insurance contracts, helpful in checking their desirability from the consumers' standpoint:

1. Does your policy say that it is "noncancellable and guaranteed renewable?" If it does, that is excellent. If it doesn't, you might find out that you are without protection at a time when you need it most.

2. Does your policy say that it is "incontestable after two years?" If so, excellent. If not, it might be canceled at any time because of some inadvertent misstatement you made in the application years ago. The fact that you have been paying premiums for years doesn't make a bit of difference.

3. Does the accidental clause in your policy say "accidental bodily injury?" If it does, fine. If it does not, I wonder if you know that you may not be covered if you happen to be pusning a desk across the floor or swing a golf club and get hurt. No sir, you had intended to push that desk or swing that club. It wasn't accidental and you're not covered.

4. In the case of a loss of an eye, a hand, a foot, both hands, etc., does your policy pay a lump sum benefit of $1,000 or $2,000? Wouldn't you rather get income for a period of years that would amount to many times the above figure?

5. If you had an accident a few weeks ago and are just showing the results of it, does your policy guarantee to pay you, or does it limit you to receiving benefits if a certain time has elapsed since the accident itself?

6. What if you are confined to your home and the doctor says, "You don't have to stay indoors any more. You should get out and get some air, maybe a trip or something." Does your income stop when you leave the confinement of a house or does it continue on?

7. Is there a limit of a year or two on that time you receive benefits on your policy or does it continue for a reasonable length of time to give you a good chance to recover from the illness?

8. What if you forget to pay a premium when it is due? Do you have a grace period or will the policy lapse?

9. Is it necessary for you to keep on paying premiums even though you are drawing disability benefits? If it is, your income is cut down, isn't it? Just at a time when you need it most. You might also forget to pay the premium and if you do, you might have difficulty reinstating your policy later on.

Study of numerous representative contracts available from large, dependable, and established companies leads us to believe that they take little or no chance of paying anyone throughout a lifetime of disability. In fact, many such non-cancelable policies are no longer available. Any professional man would be wise to have some additional form of security to carry on after five years, or so, in case he could then perform "any occupation for wage or profit." Some of the phrases in insurance contracts lend themselves to broad interpretation which might not be to the advantage of policyholders.

The present wave of enthusiasm for possessing the security of insurance benefits is wise and healthful. Let us be sure that we know what we buy and upon what we may depend in the hour of need. Physicians know better than to buy cheap and worthless policies such as those which frequently victimize our patients—among thousands of other gullible people throughout the country.

Let's ALL Help!

THIS month and next, May and June, will find committees of most state and county medical societies seeking your help to swell the American Medical Education Foundation. Let's all of us, every one, get into this campaign and help. Let's give to our own Alma Mater if preferred, to any other we believe needs help more, or just give to the Foundation without earmarking our donation for any school. It can be done any of those ways. The big point is, every medical school in these United States needs help. Let's do it **ourselves**, instead of looking to some "great white father" in Washington to do it for us and then tell us and our schools forevermore how to educate our coming generations of physicians.

Original Articles

TWENTY-FIVE DOLLARS!*

JOSEPH D. McCARTHY, M.D.
OMAHA, NEBRASKA

The prime motivation for A.M.A. sponsorship of this type of program stems from the well-known fact that if the physicians of the United States are to remain free men, the effort on their part must be universal, and to achieve this there must be closer liaison between well-informed individual physicians, as well as between these physicians and their local, state and national organizations. Discussions such as these should be helpful in bringing this about.

The rude awakening to the fact that there were those who would, if they could, relegate the members of the medical profession to serfdom, first experienced during the 1930's and continuing up to now, brought some physicians to the realization that the tranquil practice of medicine that was theirs by inheritance must now be shared with militant efforts pointed against the threat. Our unpreparedness to combat the onslaught, the meager few with the necessary experience and courage to take on the challenge, and the slow response on the part of others to join the original few, could have spelled disaster. Fortunately there was an upsurge among the rank and file of the medical profession which has resulted in at least a stalemate, and the physicians of the United States should appreciate that they now have an experienced, well-informed, hard-hitting group composed of their confreres who are ever on the job, alert to threats and able in defense.

This and more has been accomplished not by "blood, sweat and tears" alone—it has taken a tremendous outlay of funds. And this is only the beginning, for from now on in, there will be sporadic attempts to jam down our throats the well-organized plans of a super-organized minority, backed in their work by millions of dollars, the large proportion of which comes from the taxes we pay to the Federal Government. So we, although unable to match their dollars, must provide at least enough to continue a winning fight.

It strikes me that those who had certain fanciful ideas about at least socializing our United States of America and believed that the door mat to such an entry was via the medical profession and all that that term implies, should first have read the history of the A.M.A. They would have found that the A.M.A. was not born overnight, but only after going through the crucible of ignorance, prejudice, jealousy and selfishness—all of which, when the heat had spent itself, resulted in understanding and the will on the part of the individual founders to subordinate their personal aims and ambitions and unite their efforts in a common cause.

Nor had the termites in democracy read about one Nathan Smith Davis, M.D., who holds a position comparable to that of the Father of Our Country, in that he, although beset by much antagonism from his confreres, stuck by his guns and emerged as the Father of the A.M.A. He and his original small band of sympathizers did not acquire the money necessary to further their cause through dues, but rather through voluntary subscriptions. Incidentally I might point out that it took Doctor Davis three years to accomplish his purpose; that on May 5, 1847, when the A.M.A. was organized, he was but thirty years old; that he lived a two-fisted life as practitioner, teacher and medical organizer and when he died at the age of 87 he had given his all to medicine during his sixty-seven years of practice. His epitaph—

*Presented September 20, 1951, before the 81st Annual Session of the Colorado State Medical Society at Denver as part of a symposium entitled "You and Your A.M.A.," sponsored by the American Medical Association. Papers constituting the remainder of this symposium were published in the January 1952, issue of the Rocky Mountain Medical Journal.

"An untiring, irrepressible, uncompromising and incorruptible leader in medicine." I am confident that we have in our membership today young men of thirty who, if given the opportunity, would emulate this great physician.

Nor had our pink-linked brethren ever heard of, not to mention read, the preamble of our first Constitution, which stated that the purposes of this organization are "for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor and interests of the medical profession; for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men; for exciting and encouraging emulation and concert of action in the profession, and for facilitating and fostering friendly intercourse between those engaged in it." These words were written in 1847, and as far as purposes are concerned would, with few additions, cover the purposes of the A.M.A. as of 1951.

One would be logical in surmising that these New-Fair Squealers knew little about the history of our A.M.A. up to the late 1930's—the untiring and unselfish devotion of the officers and delegates to elevate medical education and the care of the sick to the position it holds. Possibly the lack of fanfare in achieving these purposes and the seeming docileness of physicians as a whole contributed to the idea that the medical profession was a "soft touch" and if American Medicine could be taken over it would be but a short time until all professions, industries—yes, and our Army, Navy and Police forces, would follow through the chutes to bureaucratic domination.

Well, since the late 1930's our "guardians of the people" have had their rude awakening and have learned that through recrudescence, a God-and-Country-loving portion of our citizens, such as found in the A.M.A., on provocation, will organize their members and help win public opinion so that, in combination, they make a formidable barrier to socialistic trends.

The good fight initiated by the A.M.A. has been in progress for approximately thirteen years. For the last ten years it has been gaining in momentum each year, in defense of what was originally a frontal attack. In addition we now have flank movements and, by infiltration, attacks from the rear, but the A.M.A. has not faltered in its purpose and has, with the aid of its constituent associations, carried the fight to the enemy. To counteract these attacks, the A.M.A. fostered a plan to publicize the trends, with the hope that physicians and laymen alike might see the light and recognize the far-reaching effects which would sooner or later involve every citizen of the United States. This campaign, however, would call for an outlay of money such as had never before been made by the A.M.A.—in Hollywood vernacular, it would be "stupendous."

Let us ever remember that the progress made up to a few years ago stemmed from the wisdom of the comparative few who created agencies within the organization which provided revenue to carry on their work without one penny of dues from fellow members. The Journal of the A.M.A. and other periodicals published by the A.M.A., along with revenue derived from technical exhibits at the Annual and Clinical Sessions, Fellowship dues, and income from investments, made up our bread-basket of the past. Up to three years ago the total income derived from these sources was sufficient to cover our many activities. Sudden expansion of these activities, however, along with many that were new, called for greater expenditures, which in turn demanded more income.

This was the reason why the House of Delegates of the A.M.A., during the Clinical Session held in St. Louis in December 1948, concluded that the time for bolstering the treasury was then and there, and accordingly levied a voluntary assessment of $25.00 on each of the members—the first levy of any kind since its foundation one hundred years before. The needs for this assessment were explained to the membership when they were requested to pay promptly. It is difficult to understand why there would not have been a 100 per cent response—if for no other reason than self-preservation, but the old bickering attitude asserted it-

self, with the result that only part of the desired amount was raised.

This led the House of Delegates in 1950 to ratify amendments to the Constitution and By-Laws which would obligate all members to pay dues each year in an amount recommended by the Board of Trustees and approved by the House of Delegates, but not to exceed $25.00. It was recognized by some that the $25.00 ceiling might prove embarrassing if more than the total that this would bring in were needed, and at the Annual Meeting in Atlantic City this year the portions of the Constitution and By-Laws dealing with dues were again amended and the $25.00 ceiling eliminated. However, it must be remembered that whatever the dues, $15.00 of it is earmarked for subscription to the Journal of the A.M.A., leaving, on the present basis, only $10.00 for the general fund.

Members of labor unions not only pay dues to their local and national organizations as soon as their membership starts, but before becoming a member must pay an initiation fee. Compare this to our own past, as far as the paying of dues to our national organization is concerned. Up to 1949 it was zero. I recognize that in addition to A.M.A. dues, physicians must pay their local and state society dues, but the total is still considerably less than that demanded by a great many non-professional and fraternal organizations. I do not know of a member of the A.M.A. who is conversant with the great work being done, who does not readily admit that value received outstrips by a wide margin the amount of dues paid.

What does a member of the A.M.A. receive for his $25.00? I am confident that the majority of members have no conception as to the many benefits that they derive, either directly or indirectly. I would like to enumerate a few:

The finest medical journal and specialty journals published.

The A.M.A. library for the use of members, either direct or by mail; the publication of a Cumulative Index—both of which are most helpful to those seeking medical references or bibliographies.

Financial returns to the State Medical Societies which are members of the State Journal Advertising Bureau of the A.M.A. The Bureau functions as an advertising representative, the purpose of which is the obtaining of advertisements from national firms for the state journals. The entire proceeds received by the A.M.A. for these advertisements are turned over to the state journals holding membership in the Bureau, and prorated according to the amount of national advertising carried by the respective journals.

The various testing laboratories for drugs, cosmetics, physical devices, and foods in relation to nutrition, all of which bring to the physician information which is most helpful in guiding him in his practice.

Admission without registration or any other type of fee to the Annual and Clinical Sessions, which provide the best opportunity in the shortest time for postgraduate study in all specialties and general practice.

The many Councils, Bureaus and Committees with specific allocated functions having to do with Medical Education and Hospitals, Voluntary Health Plans, Medical Economics, National Emergency Medical Service, Rural Health, Health Education, Public Relations, Legal Medicine, and many others, give to us the results and benefits of their research and findings as well as expert opinions so helpful to physicians and laymen.

Incidentally, may I remind you that members of the Colorado State Medical Society are contributing considerably to the accomplishments of some of these committees—Doctors J. M. Perkins, Committee on Grass-Roots Conference; G. A. Unfug, Committee to Study Committees of the House, Delegate to the A.M.A., Committee on Chronic Illness, and Co-ordinating Committee of the National Education Campaign; F. A. Humphrey, Council on Rural Health; McKinnie H. Phelps, Committee on Legislation; and S. P. Newman, Member, Council on Scientific Assembly; and your most efficient Executive Secretary, Mr. Harvey Sethman, Chairman of the A.M.A.'s Advisory Committee on Public Relations.

Being a member of the Council on Medical Service, I have had some experience with the many functions and duties of the Council. These have to do with social changes and economic trends, such as, means for improving the distribution of medical service; informing constituent associations, component societies and individual physicians of proposed changes affecting medical care; opposition to compulsory sickness insurance by helping to initiate a voluntary health insurance program, and issuing the Council's Seal of Acceptance to those voluntary prepayment medical care plans that meet certain basic standards; setting up minimum requirements for lay-sponsored voluntary health plans; sponsoring regional conferences throughout the country as a medium for exchanging ideas among state associations and between these associations and the A.M.A.; consultants for medical care of veterans, industrial workers, indigents, and maternal and child care.

The Council has made a survey of group practice programs and policies, malpractice insurance, and distribution of physicians. It has in print many pamphlets and excellent exhibit material relative to the aforementioned for distribution.

The Council, along with other activities, directed Public Relations until 1946, when the Department of Public Relations was created. The Council organized and directed the Washington Office of the A.M.A. until November 1948, when it was placed under the jurisdiction of the Board of Trustees.

Seven correlating committees composed of physicians assist the Council in carrying out its purposes.

To accomplish all of these functions, it has been necessary to increase the office personnel and enlarge the office space of the Council. We are indeed fortunate in having a most loyal and efficient full-time staff. Messrs. Hendricks, Cooley and Brower, who head up the staff, are all experts in their respective fields.

If the duties of other Councils, Bureaus and Committees were enumerated, it would be found that each has a full-sized job in its own right.

The Washington Office of the A.M.A. has become our inlet for proposed federal legislation affecting the practice of medicine in the United States. It is a reference library for Senators and Congressmen. It is the outlet through which our efforts pour in combating inimicable legislation. And may I remind you that to date all legislation affecting physicians and the practice of medicine in the United States opposed by the A.M.A. has been defeated.

The recent campaign directed by Whitaker and Baxter under the supervision of the Board of Trustees cost plenty of money, and for this reason has been condemned by some. In my opinion if it had not been for this campaign pointed toward the education of the general public in matters having to do with the "isms"—we might by now be under the thumbs of the fists that would rule the world. A campaign is now being conducted to further the sale of voluntary health and accident insurance and has undoubtedly contributed much to the great increase in the number of contracts being written this year.

It must not be forgotten that many of the activities now carried on by the A.M.A. are the outgrowth of increased demands on the part of state and county medical societies as well as individual physicians for services of one character or another. This is only one of the many direct returns on dues paid.

All of these activities must have a directing force and workers in sufficient number to carry out the many details incident to the tremendous work load. The center of activity, of course, is Headquarters of the A.M.A., 535 North Dearborn Street, Chicago, Illinois. The upkeep of the building, equipment, printing plant, and the various departments, along with salaries to over 800 employees, amounts to no small overhead.

Two years ago it was necessary to enlarge A.M.A. headquarters at a considerable expenditure. It is probable that another addition will have to be made inasmuch as the present floor space is crowded and filing space at a premium.

And may I point out an important item which I believe is glossed over and taken for granted. If we as members of the A.M.A. were to pay for the services of the splendid

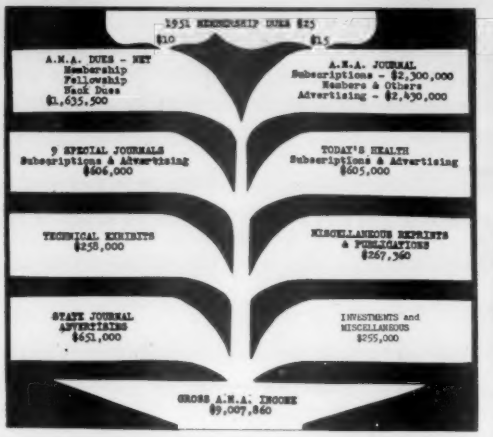

Fig. 1. Where the money comes from.

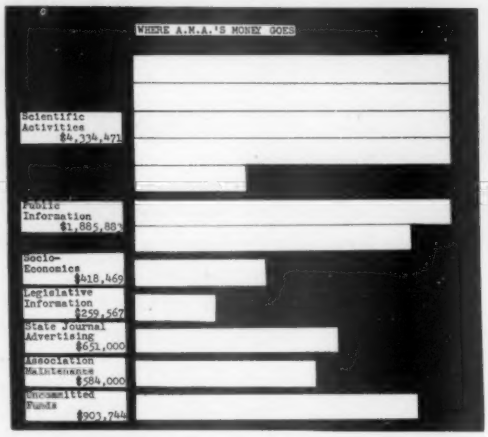

Fig. 2. Over-all budget.

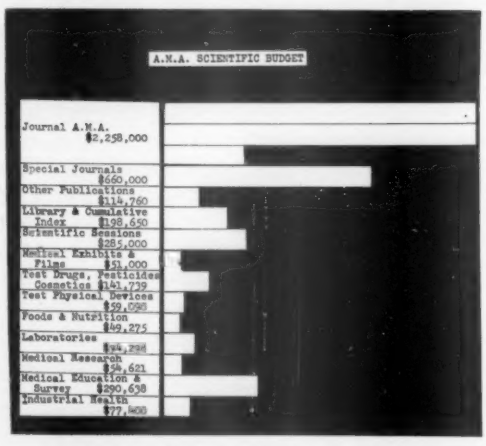

Fig. 3. Budget for scientific activities.

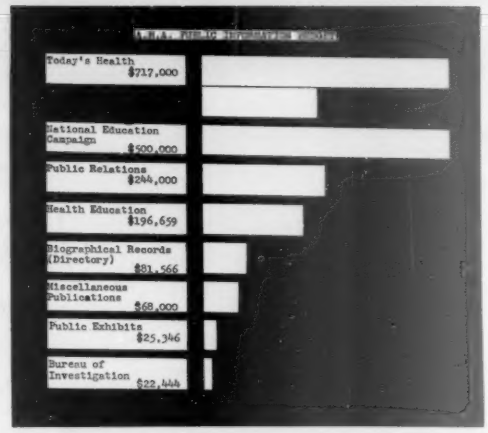

Fig. 4. Public information budget.

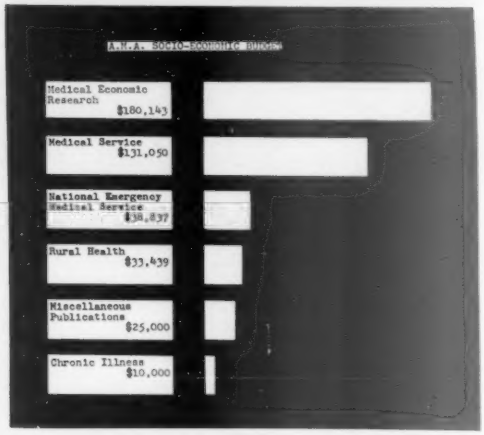

Fig. 5. Socio-economic budget.

physicians who now give of their time and their health, not to mention the licking they take on the income side of the ledger, it would require many-fold the $25.00 that we now pay. I know of no other organization that has the good fortune to have men willing to make the necessary sacrifices and devote their services without remuneration as do the Officers, Council and Committee members now serving you and your A.M.A. To these men we owe a debt of gratitude that never can be adequately paid.

Let us think in terms of our dues being what they actually are—ten dollars—and compare that expenditure with the bountiful returns. If, therefore, you come in contact with one of your confreres who is grumbling about the payment of his A.M.A. dues,

why not try to point out to him the value received, and that a goodly part of the work is applicable to him and his practice, and can be maintained only through the support of dues-paying members.

"Twenty-five dollars for dues! Wow!"—"What do I get out of it?"—"What happens to it?"—This thumb-nail sketch I hope will give you a few of the answers to these questions.

NEW DEVELOPMENTS IN THE TREATMENT AND CONTROL OF TUBERCULOSIS*

JULIUS L. WILSON, M.D.
NEW ORLEANS, LOUISIANA

Widely heralded new methods of treatment and the steady fall in death rates have given many people a false impression that tuberculosis is already under control. On the contrary, the rising number of known cases of tuberculosis in most states testifies otherwise, and the old principles of treatment and control are unchanged. We are simply better armed than ever before to fight tuberculosis to the finish. Unlike our uncertain position in the international struggle where we play for more time to prepare and pray for peace, in the war on tuberculosis we are now ready to push to a conclusion.

Tuberculosis associations are dedicated to exterminate tuberculosis, not to fight the disease in the individual patient himself. However, tuberculosis is the sum total of the individuals affected. Therefore, we must see to it that everyone who needs it gets the benefit of the best possible treatment and that everyone else is protected from infection.

Treatment

The antibiotic agents continue to hold the limelight on the stage of treatment. The star performer is still streptomycin although it was predicted five years ago that a better drug must needs be found shortly to overcome the difficulties imposed by the development of bacterial resistance. Although the ideal of a truly effective non-toxic drug, which is capable of suppressing the tubercle bacillus for at least two years, has not been achieved, the experience in utilizing the presently available antibiotic agents has refined and extended the treatment of all forms of tuberculosis. Streptomycin's usefulness has been prolonged by the parallel development of intermittent dosage and combination with other agents. The uniquely cooperative clinical research of the Veterans Administration and the Armed Forces hospitals has led the world in the trial of new antibiotic agents and come up with the unexpected answer that combined, interrupted therapy with streptomycin can be maintained effectively for many months. Dihydrostreptomycin has become merely another form of streptomycin to use alternatively.

Paraminosalicylic acid (PAS) has found a real place as a supplement to streptomycin as a means of prolonging the suppressive effect beyond the previous limit of streptomycin therapy. The safety and effectiveness of thiosemicarbazone (TB-1) is still controversial. Viomycin and neomycin have failed to replace streptomycin largely because of their toxicity and the prompt emergence of bacterial resistance. Mycomycin, although most potent, is so far too unstable even for clinical trial. Terramycin is too unpalatable and upsetting to the gastrointestinal tract to be administered in doses therapeutic for tuberculosis. Methods of prolonging the action of drugs by renal block have so far been disappointing. No extremely effective safe new drug has as yet appeared on the scene.

Interest has been aroused in the possibility of combining antibiotic therapy with other agents to modify the tissue response to tuberculosis. Potassium iodide administered with streptomycin has failed to pro-

*Presented before the meeting of the New Mexico Tuberculosis Association, May 26, 1951, in Las Vegas, New Mexico. From the Section of Chest Diseases, Ochsner Clinic, and the Department of Medicine, Tulane University of Louisiana, School of Medicine, New Orleans.

duce any difference in the results. Smith in England successfully employed tuberculin intrathecally to supplment streptomycin in several comatose patients with tuberculous meningitis, thus resurrecting the shades of the old controversial subject of tuberculin therapy. Streptokinase and streptodornase are being extensively employed to combat the fibrin deposits in tuberculous meningitis and tuberculous empyema treated by antibiotics and surgical measures. So far the combination of steroids, such as cortisone, with antibiotic therapy in pulmonary tuberculosis is still in the exploratory stage.

Cortisone and ACTH are now known to have a profound temporary effect on the inflammatory reaction and tissue allergy of tuberculosis. Up to the present these substances seem to be more useful as tools to investigate the reactions of the body to tuberculosis than as therapeutic agents. The warning that these potent modifiers of tissue response to injury may actively release the tubercle bacillus to execute further serious damage in the host should prevent all good physicians from administering them for other conditions without first making sure that the patient has not had active or even latent tuberculosis.

The hemagglutination reaction of Middlebrook and Dubos has not yet proved its place in the diagnosis of activity in tuberculosis or as a guide to treatment. However, this revival of interest in the immune reaction to tuberculosis with new technics leads to renewed hope that this X in the algebraic equation of tuberculosis as seen in the patient may be readily determined in the future.

The surgical and mechanical treatment of tuberculosis has produced little that is new in the past year. Pneumoperitoneum seems to have reached its peak in use and may well decline somewhat in popularity as treatment is instituted earlier and better balanced. The thoracic surgeons have progressed to the repair of bronchi and to the remodeling of diseased hearts without, as yet, solving the problem of the patient with bilateral apical cavities. Some form of extrapleural pneumothorax or plombage still awaits the ideal substance to fill the space created without ultimate injury to the patient. The technic of resection of diseased segments, lobes or entire lungs has been perfected to the point of reasonable safety, although the remote results of this treatment are still to be determined. There is an increasing tendency to resect all rounded "encapsulated" tuberculous lesions as being potentially dangerous.

As a guide to the safe treatment of tuberculosis by surgical methods exact studies of pulmonary function have come into widespread use whilst the original investigators are still in some disagreement as to the methods to be used and as to the best way in which to express results. Pulmonary physiologists have recently agreed on terminology to cover the analysis of pulmonary ventilation.

Control

The long range program of mass roentgenographic surveys in the major cities of the United States initiated at the close of World War II by the United States Public Health Service has evolved better technics of preparatory health education, better financing and, most important, more effective diagnostic work in following through on the individuals with abnormal pulmonary findings. This method of case finding can now not only discover the tuberculosis present in the adult population of the community as a statistic but also can direct the victims into channels of care. Thus, for the first time in history, treatment in an early stage of the disease is possible for a majority of patients with active tuberculosis, and at the same time the chronic spreaders of tuberculosis with unrecognized advanced disease, are discovered and isolated. Eventually this will decrease hospital loads as well as the tuberculosis mortality rate.

On an experimental basis tuberculosis associations are taking the lead in multiphasic screening surveys. When the initial difficulties are overcome, this new approach to the problem of chronic disease in general will utilize the experience and

technics obtained on mass roentgenographic surveys and the cooperation of official and nonofficial agencies.

An electronic fluoroscope has been perfected which enables daylight inspection of the heart and lungs as well as transmission of the images to distant stations. It is possible that this may in the future become another effective tool in case findings and tuberculosis control.

In the field of facilities for tuberculosis treatment more hospital beds are becoming available in certain states, for example, Florida, where extensive surveys have discovered a large case load. The Veterans Administration is providing a sizable part of the total treatment of tuberculosis in men in this country. The developments in treatment outlined in this paper all tend to render more patients free of positive sputum and therefore safe to return to their normal environments as well as to reduce the numbers relapsing to return to the hospital or to die at home.

Vaccination against tuberculosis: In this country BCG continues to be more widely used to protect medical students, nurses, and other selected groups necessarily exposed to infection. In Japan, India, Eastern Europe and elsewhere BCG is being widely used to meet, at least partially, a tuberculosis problem far beyond any other means of control. In the meantime progress is being made in methods of preparing BCG for storage and shipment without loss of potency and in developing other avirulent vaccination agents. Extensive vaccination campaigns also lend themselves to collateral research in the nature of allergy and immunity.

Conclusions

Great as are the benefits of new treatments to the patient and the physician, we must not let the headlines in either newspapers or medical journals obscure the facts of tuberculosis, as they have been discovered by Koch and amplified by Trudeau, Robert Philip, Pirquet and others. In treatment we still must care for individuals with tuberculosis. Neither bacteriostatic agents nor successful resection of diseased areas have yet converted a positive tuberculin reaction in a patient to a negative one. Until that happens we cannot say to the patient, "Go your way rejoicing; you are cured." Re-education, time (in terms of years) and unflagging patience on the part of the physician and patient are still necessary.

In the control of tuberculosis the old principles are equally sound. New developments are still extensions of our ability to carry out the plan of first finding tuberculosis earlier, then treating it successfully while isolating patients in the infectious stage, and finally, protecting the contacts in the home and community. Any gain in control by partial protection of especially endangered persons or groups through vaccination may be added to the progress of the principal campaign of prevention by isolation and treatment.

In many parts of the United States there are now at large too few open cases of tuberculosis to maintain the infection in the community. This is technically control here and now; and yet we should not be satisfied until there is effective control in every country in the world, every state, every city, every ward and every home.

After a review of available data on the action of isonicotinic acid hydrazide and its isopropyl derivative upon the tubercle bacillus in vitro, and upon the course of experimental tuberculosis in animals and clinical tuberculosis in man, it may be stated that their demonstrated action, although highly encouraging, appears in no way to alter the basic principles of the treatment of tuberculosis as presently understood. Much more work will need to be done to ascertain the exact place of these drugs in the treatment of this disease. It is anticipated that further information will accumulate rapidly.—The Exec. Com. of the American Trudeau Society (Medical Section of the National Tuberculosis Association), Tuberculosis Abstracts, May, 1952.

Ever since the development of satisfactory methods for mass chest screening during World War II, the idea has been spreading of applying the principle to large segments of our population, with the goal of discovering diseases in the incipient and curable stages. This principle is applicable particularly to pulmonary tuberculosis, and to date about a dozen of our large urban populations have participated in such community public health efforts. The dividends have been real and tangible, even though the surveys have not been as complete or all-inclusive as could be desired.—Merrill C. Sosman, M.D., the New England J. Med., April 12, 1951.

AORTOGRAPHY IN ROENTGEN DIAGNOSIS*

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DENVER

Immediately following Roentgen's announcement of the photographic properties of x-rays, it became apparent that little more than differentiation between bone, soft tissue and air could be expected, particularly with the equipment then available. Within a few weeks after Roentgen's discovery, Haschek and Lindenthal (February, 1896), demonstrated outlines of blood vessels of the hand of a human cadaver by x-ray following instillation of radiopaque contrast media. Progress in Roentgenography, in fact, has been very largely based on the devising of technics for creating x-ray contrasts to differentiate structures of similar densities. This applies to most of the tissues and fluids of the body since most of these have the density of water. However, it was not until 1923 that suitable technics for use in the blood vessels of living persons were developed. Berberich and Hirsch at that time published illustrations of arteries and veins of the extremities visualized with strontium bromide. In 1924, Brooks successfully produced angiograms with sodium iodide. A number of articles on peripheral angiograms followed these pioneer successes, in this country by E. V. Allen and J. D. Camp. Dos Santos and his co-workers in 1929 first reported visualization of the aorta and its branches in living persons by translumbar injection of sodium iodide. Another successful report by these same authors in 1931 and results by Osario, 1933, established aortography as a valuable new method for the diagnosis of abdominal conditions. Nevertheless, the technic was reluctantly accepted or severely criticized (Henline and Moore, 1936), chiefly due to misapprehensions with regard to the x-ray equipment required, the special skills necessary, and the potential dangers to patients. However, the non-contrasting nature of abdominal viscera and their tumors and other disease processes creates a need for added definitive technics to help elucidate the type of disease process which is present. Changes from the normal anatomic and physiologic states are generally accompanied by changes in the local anatomic distribution and physiologic demand upon the circulatory system. Hence, a knowledge of the local circulation yields inferential information concerning the process in the area under consideration. This paper is offered to show the diagnostic usefulness of aortography, which is a valuable method for illustrating the circulation of some of the abdominal viscera and some of their diseases, and to emphasize the ease with which aortography is accomplished in small and simply equipped x-ray departments. It is also our desire further to confirm its innocuous effects on human subjects.

CASE REPORTS

Case 1. A 20-year-old white woman whose complaints on admission to Colorado General Hospital were related to amenorrhea and virilism. Physical examination showed excessive hair of masculine distribution, small breasts, and infantile female genitalia. An adrenal cortical tumor was suspected. Pyelograms, skull films, and a retroperitoneal air study were negative. A translumbar aortogram (Fig. 1) was obtained. No evidence of a suprarenal neoplasm could be found. The patient was explored in the ab-

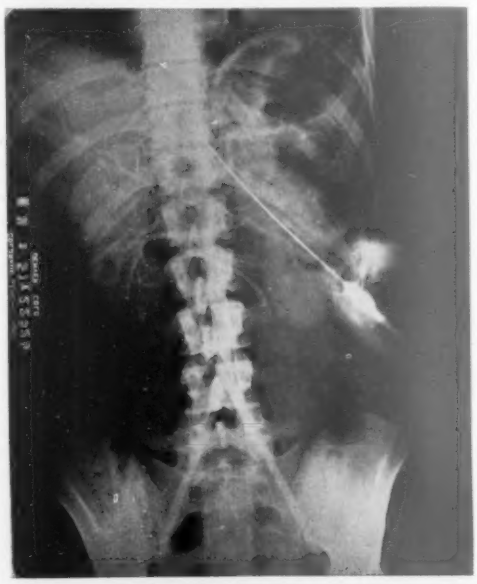

Fig. 1, Case 1. Normal translumbar aortogram.

*From the Divisions of Radiology and Medicine, University of Colorado Department of Medicine, Denver.

sence of evidence to support the clinical impression; nothing abnormal was found in the adrenal regions.

Case 2. A 33-year-old white man admitted to National Jewish Hospital with known tuberculosis of the testes, epididymes, right hip, and suspected renal tuberculosis. A pyelogram (Fig. 2) showed minimal tuberculosis of the upper pole of the right kidney, confirmed by positive urinary

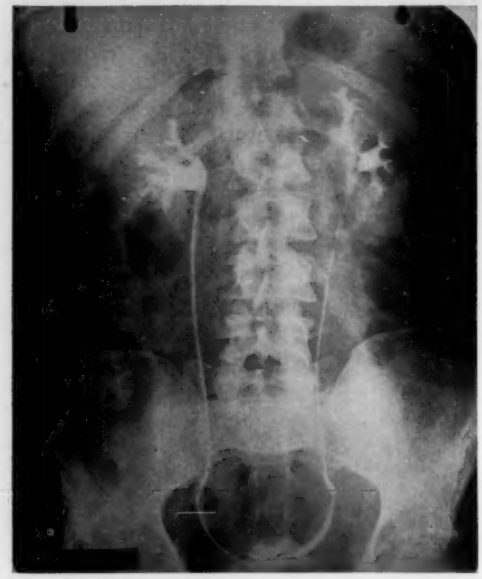

Fig. 2, Case 2. Repeated pyelograms during many months showed unchanging tuberculosis involvement limited in the kidneys to the right upper calyx. The possibility of heminephrectomy rather than total nephrectomy was being given consideration. It became necessary to know the distribution of the vascular structures before heminephrectomy could be considered favorably.

cultures. The problem of a heminephrectomy was considered, depending in part on an adequate divisible blood supply to the upper and lower halves of the kidney. An aortogram was done for evidence on this point (Fig. 3), revealing bifurcation of the right renal artery with good separate vessels to each pole, making it plausible to undertake the surgery considered.

Case 3. A 24-year-old gravida 6 para 6 who was admitted to Colorado General Hospital in the seventh month of gestation because of vaginal bleeding. The diagnoses considered included placenta previa, and to demonstrate the maternal placental vessels an aortogram was attempted. The first trial was unsatisfactory; twelve hours later the procedure was repeated. Fig. 4 shows the maternal placental vessels high on the right side of the uterine fundus, well above the level of the internal os. On sterile vaginal examination to confirm these findings no placenta was palpable. Subsequent delivery was uneventful.

Case 4. A 53-year-old white woman admitted to Colorado General Hospital complaining of pain and swelling of the lower extremities of eight weeks' duration, and of progressive bluish discoloration of the toes of the right foot of

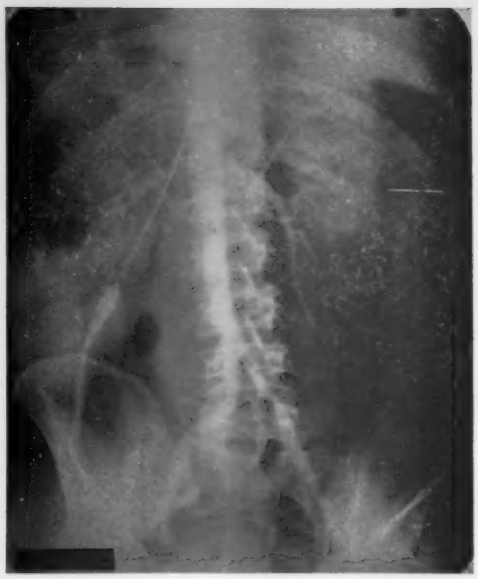

Fig. 3, Case 2. The needle is inserted in the aorta on the left side. Aortography shows bifurcation of the right renal artery with each pole supplied by a separate branch. The vascular distribution appears favorable for heminephrectomy should it be desired to carry out this procedure.

four weeks' duration. Physical examination showed impending gangrene of the toes of both feet in an obese woman with swollen lower extremities. Femoral pulses were absent. The patient's pain was relieved by a continuous sympathetic block with 1½ per cent monocaine. An

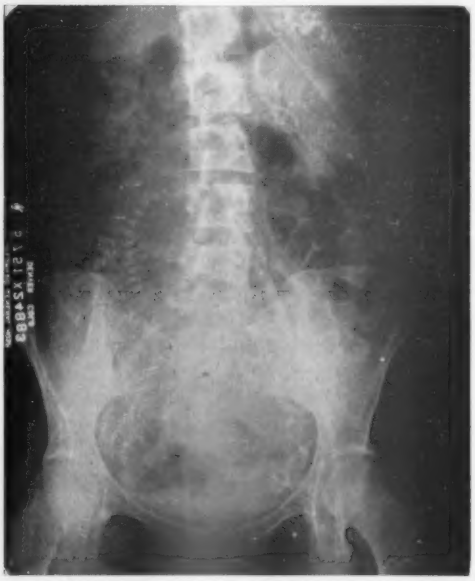

Fig. 4, Case 3. Placental vessels are discerned overlying the crest of the right ilium, thus ruling out placenta previa.

aortogram (Fig. 5) demonstrated complete occlusion of the aorta 1 cm. below the origin of the renal arteries. A thrombus at this level was verified at surgical exploration.

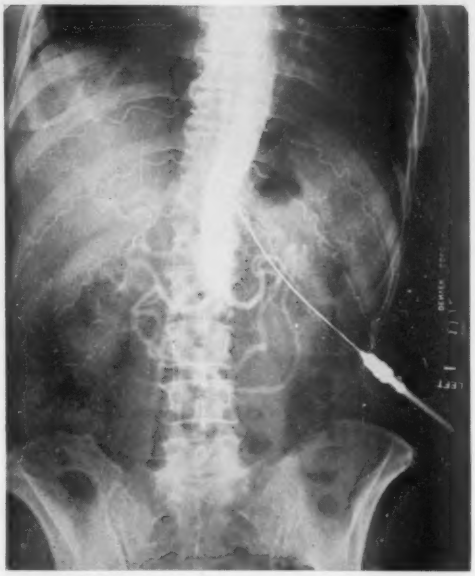

Fig. 5, Case 4. Female, aged 53, with intermittent claudication for three months, pain in the right toes for one month. Right foot was cyanotic to the ankle, femoral pulsations absent bilaterally, aortic pulsations absent below the umbilicus. Cardiac status was judged normal. Aortography shows aorta blocked just below the origin of the renal arteries.

Case 5. A 70-year-old white man who entered Colorado General Hospital complaining of cramping pains in both legs, worse on exertion, of six months' duration. The patient also had severe generalized abdominal pain of three days' duration. Physical examination showed swelling of the abdomen and lower extremities, and weakness of the leg muscles. There was no evidence of gangrene in the lower extremities, although there were no palpable pulsations in the femoral or abdominal vessels. Abdominal aortic occlusion by thrombus was suspected and was demonstrated by translumbar aortography (Fig. 6). At surgery for bilateral lumbar sympathectomy the thrombus was proven.

Case 6. A 45-year-old white man who had hematuria and right lumbar pain for one year before admission to Colorado General Hospital. On admission a mass was discovered in the right side of the abdomen, posteriorly. A pyelogram showed the mass in the inferior portion of the right kidney, suggesting a malignant neoplasm. Aortography (Fig. 7) showed "puddling" in the region of the mass, confirming the diagnosis of a malignant tumor. At operation an adenocarcinoma 4.5 by 8 by 10.5 cm. was found, filling all of the right kidney except the region of the upper pole.

Case 7. A 56-year-old white man who entered the Colorado General Hospital after two days of urinary bleeding. He had right lumbar and right groin pain intermittently for two years. There was a gradual twenty-pound weight loss

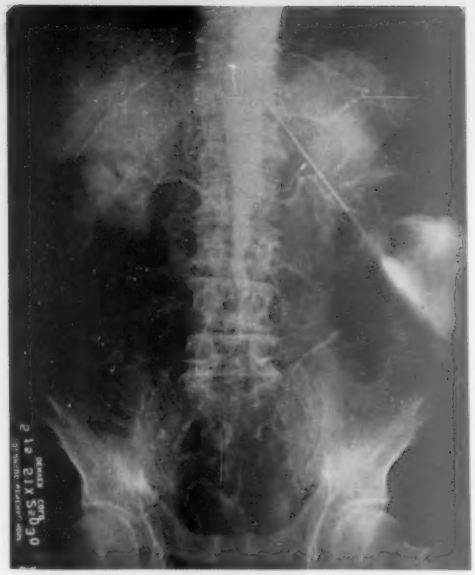

Fig. 6, Case 5. Clinically suspected aortic thrombosis. Aortogram indicates a thrombus related to the left wall of the aorta with complete occlusion at level of L 4. Note the dilated intercostal arteries, part of the collateral circulation.

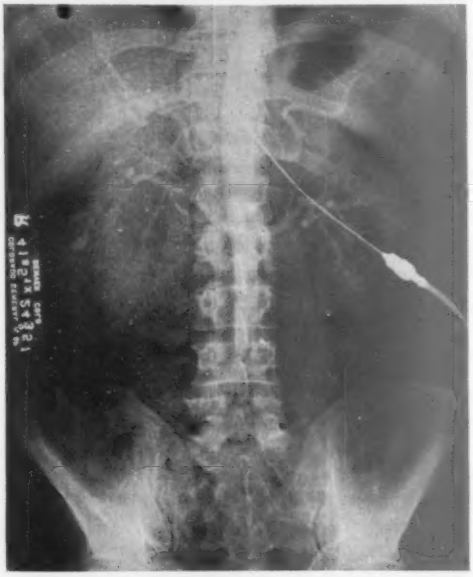

Fig. 7, Case 6. "Puddling" in the vascular supply to the mass in the right kidney indicates the presence of a malignant tumor.

in this interval. Physical examination revealed a mobile mass 8 cm. in diameter in the abdomen on the right side, posteriorly. Pyelograms were characteristic of a renal neoplasm (Fig. 8). An aortogram in this case (Fig. 9) was not diagnostic; there was only very slight "puddling," probably due to film exposure at an inopportune

time. This case illustrates the probable advantage of multiple rapid serial exposures, and that a single negative aortogram may be misleading; at operation a large hypernephroma was removed.

Case 8. A 64-year-old white woman whose chief complaint on admission to Colorado General Hospital was a lump in the right side of the abdomen of three months' duration. There was no pain, hematuria, weight loss, nausea, vomiting or diarrhea. Physical examination showed palpable masses in both kidney regions, larger on the right than on the left. A pyelogram

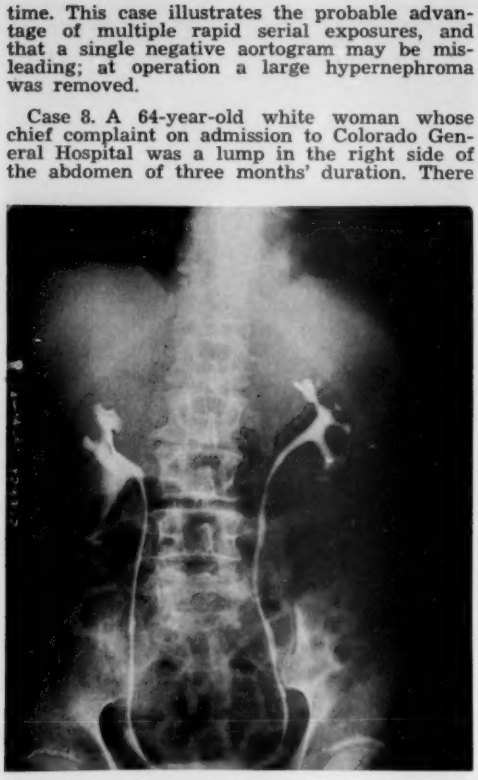

Fig. 8, Case 7. Pyelogram indicates the presence of a right renal neoplasm.

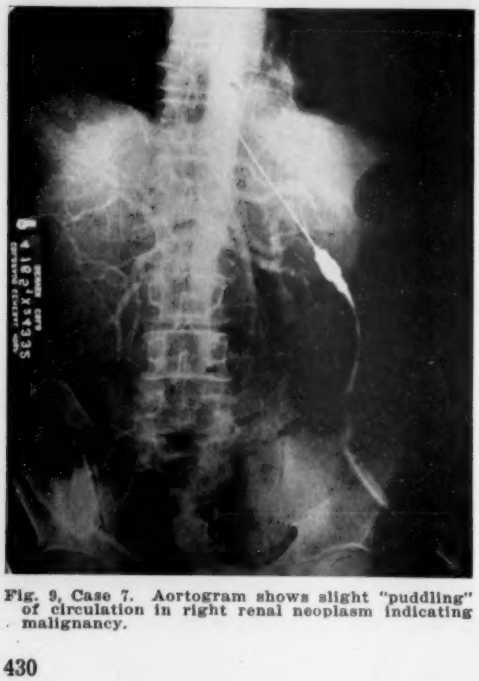

Fig. 9, Case 7. Aortogram shows slight "puddling" of circulation in right renal neoplasm indicating malignancy.

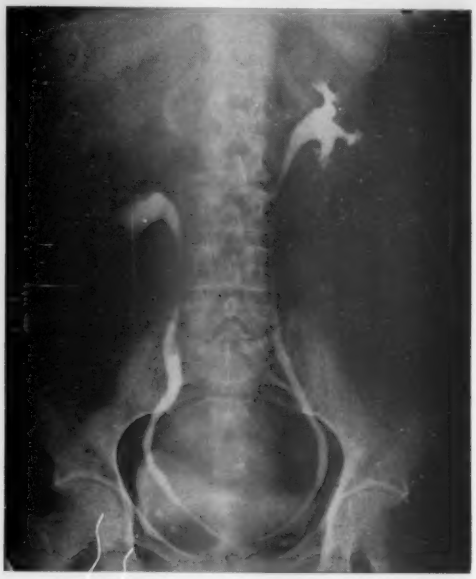

Fig. 10, Case 8. Female, aged 64, with "lump" in right side noted for three months. Retrograde pyelogram revealed a large mass in each kidney, distorting and depressing the intrarenal excretory system on the right, but not greatly affecting the intrarenal excretory system on the left. The mass on the left is faintly discerned at the lower pole.

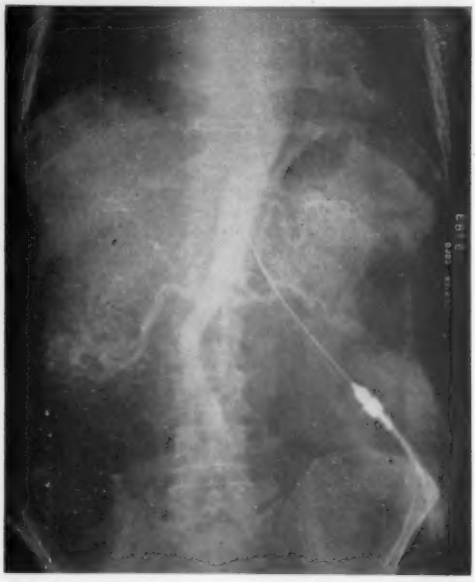

Fig. 11, Case 8. Aortography shows characteristic puddling in the circulation of the right kidney mass indicating malignancy. Vascularization is not present within the left renal mass indicating that this is a renal cyst. Diagnosis was confirmed bilaterally through surgical exploration.

showed evidence of a mass in the upper pole of the right kidney and of another mass in the lower pole of the left (Fig. 10). Aortography (Fig. 11) showed the "puddling" of a malignant tumor on the right, and the avascularity of a benign cyst on the left. The x-ray diagnosis was confirmed at operation.

Case 9. A 20-year-old white woman admitted to Denver General Hospital complaining of amenorrhea, a masculine type of hirsutism, obesity, and of multiple generalized vague aches and pains. There were no eye complaints nor headaches. Physical examination suggested Cushing's syndrome. On physical and x-ray examinations no evidence of an intracranial or intra-abdominal tumor could be obtained. Aortography was attempted in an effort to reveal a possible adrenal neoplasm not shown by the previous methods. Fig. 12 shows accidental periaortic injection of 10 c.c. of 75 per cent Neoiopax. A good pyelogram was obtained four hours later (Fig. 13). A film made nine days later at the time of discharge was normal. The patient had no difficulties as a result of this accident.

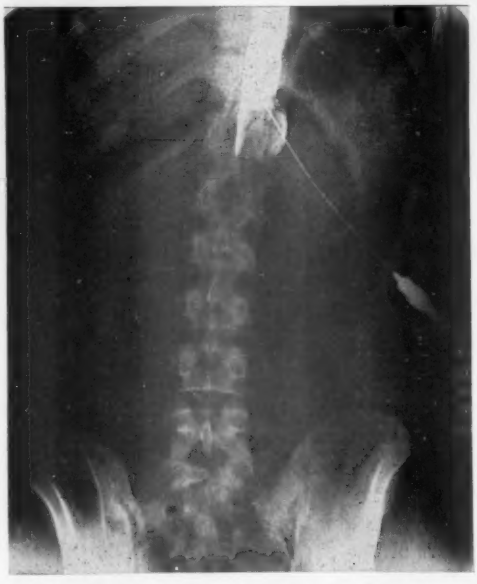

Fig. 12, Case 9. Attempted aortogram results in accidental periaortic injection of 10 c.c. of 75 per cent Neoiopax.

Case 10. A 78-year-old white man who entered Colorado General Hospital complaining of increased fatigue and right lower quadrant and right flank pain. Physical examination revealed a debilitated old man with a large pulsating mass filling the left side of the abdomen, raising the possibility of an abdominal aneurysm. A plain film of the abdomen (Fig. 14) was compatible with an abdominal aneurysm. The blood pressure was 218/110; other laboratory data including the serology were negative. Aortography showed a tortuous aorta with marked arteriosclerosis. There is evidence for a thick thrombus lining the pathological vessel, reducing its lumen (Fig. 15).

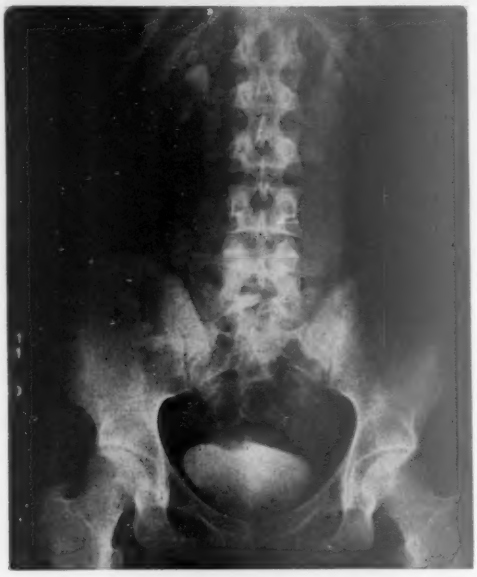

Fig. 13, Case 9. Film taken four hours after film of Fig. 12 demonstrates prompt absorption and excretion of extra-aortic contrast material.

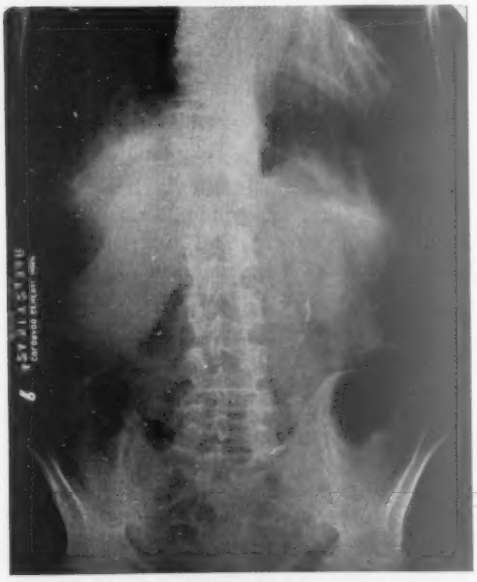

Fig. 14, Case 10. Male, aged 78, complained of a pulsating abdominal mass. Preliminary film shows calcified plaques of the lower thoracic and abdominal aorta.

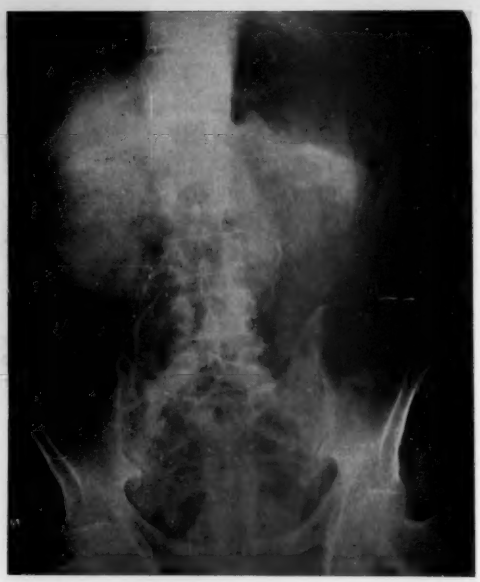

Fig. 15, Case 10. In the aortogram, the increased width of the soft tissue space between the calcified plaque in the left lateral wall of the abdominal aorta and the stream of contrast material indicates a thickened aortic wall, probably atheromatous, possibly thrombus. Right kidney shows general increased density due to filling of the excretory tubules with contrast medium. Left kidney is atrophic and fails to show filling with contrast medium. It is therefore considered nonfunctional and has lost its circulation.

Discussion

The ten cases described have been selected for presentation to illustrate some of the range of diagnostic usefulness of aortography, the simplicity of the procedure, and its relative safety in a variety of clinical conditions. Fig. 1, Case 1, demonstrates the normal vascular anatomy of the aorta and its branches as revealed by aortography. The celiac axis and its branches, the superior and inferior mesenteric arteries and the common iliac arteries are clearly shown. In the suprarenal areas there is no displacement of the vessels, nor any "puddling" to indicate the tumor suspected. With our increased experience we now believe the negative finding sufficient evidence to contraindicate the surgical operation to which this patient was subjected.

In Case 2 it was shown by aortography that the kidney has an adequate divisible blood supply, apparently sufficient to make possible the elective surgery under consideration. It is conceivable that other abdominal viscera or portions of the gastro-intestinal tract might be similarly analyzed as a preparatory measure in other surgical procedures. Case 3 is a further extension of this technic for the study of normal vessels in the abdomen under pathological or physiological conditions. The location of the placental vessels in the pelvis would have confirmed the suspected diagnosis of placenta previa, and the management of the case would have been entirely different, again involving a major surgical procedure.

Cases 4 and 5, Figs. 5 and 6, illustrate conclusively the appearance of aortic thrombosis and further show the precise level of the thrombus. In reading these films it is necessary to consider whether or not the cutoff of the shadow in the aorta is the thrombus margin or simply the advancing column of contrast material at the moment of filming. The spread of Neoiopax in peripheral vessels and the filling of enlarged collateral vessels indicate thrombus in the cases cited. In other cases it might be impossible to distinguish the above and rapid successive exposures or repeated examinations would be necessary.

Cases 6 and 8, Figs. 7 and 11, illustrate the characteristic "laking" or "puddling" of contrast substance within irregular vascular pools in renal tumors. The circulation is sluggish in such sinusodial spaces, and contrast material will persist for demonstration on films made seconds after the normal channels have cleared. Avascular cysts are thereby clearly differentiated from malignant tumors.

Cases 9 and 10 contribute much information on the usefulness and safety of aortography. In one event the subject was 78 years old, with extensive arteriosclerosis and hypertensive cardiovascular disease. The needle appears to have punctured a calcific plaque, yet there was no clinical evidence of any complication of this procedure. Elliott and Peck have shown a similar case in which aortography demonstrated a thrombus occluding the aorta. The patient expired seventeen days after aortography. At autopsy a careful search of the aorta at the site of injection showed no evidence of the puncture although an arteriosclerotic plaque

involved almost the entire region of the injection.

The accidental periaortic injection of contrast material (Case 9) was followed by no complaints or detectible complications in this or in three other extra-arterial injections in our series.

In our small series of aortograms, begun in 1950, now numbering thirty cases, we have had no complications due to the injection of contrast material. In one case scheduled for aortography, cardiac arrest developed, presumably the result of the anesthesia by intravenous sodium pentothal. The patient had a markedly damaged myocardium and was in mild failure. Resuscitation of this individual after a long interval of cardiac massage was successful and is to be reported by Owens and Reynolds.

Fatal accidents as a result of aortography have been reported. A survey of the literature to date reveals at least nine deaths possibly associated with this procedure (Henline and Moore, 1936; Wagner and Price, 1950; Milanes, et al., 1950). The immediate causes of death are attributed to acute iodism, hemorrhage, injection of the superior mesenteric artery with NaI and anesthesia. It is our estimation that the risk of the procedure using modern contrast substances is approximately that of cerebral or cardiac angiography, and that the risk is not increased by the aortic puncture.

Material and Method

The equipment and procedures employed in the University of Colorado Department of Radiology are chiefly those described in the literature, most recently summarized by Smith and his co-workers, 1951, and by Sante, 1951. Any x-ray equipment with a Bucky apparatus capable of producing a diagnostic film of the abdomen with a .5 second exposure or less is sufficient for aortography. Serialographic equipment is distinctly advantageous but it is not essential in most cases.

The patient is prepared by enemas and by withholding the meal before the examination. Pre-anesthetic sedation is administered one-half to three-fourths hour before the procedure. A preliminary film of the abdomen, prone, is made to check the preparation of the patient, the position on the table, and the exposure factors. This accomplished, the skin of the left lower posterior thorax and of the lumbar region is scrubbed, painted with an antiseptic and draped with sterile towels. The patient is then lightly anesthetized with intravenous sodium seconal, done in our clinic by an anesthetist, whose responsibility it is to observe the vital signs of the patient throughout the procedure. In smaller clinics this can be done by a physician or nurse who has had similar training and experience.

The skin is infiltrated with procaine at a point approximately 8 cm. to the left of the spinous processes, at the inferior border of the twelfth or lowest palpable rib. An 18-gauge needle 15 cm. long with the stylet in place is then introduced through the infiltrated region and advanced upward, medially, and anteriorly toward the centrum of T 11 or 12. On striking the bone, the stylet is withdrawn and the needle is advanced step by step toward the anterior border of the centrum, until it passes immediately anterior to the vertebra. If the patient is lightly anesthetized, and this is all that is required, there may be some indication of pain when the needle strikes the periosteum. This region can be infiltrated with procaine if desirable.

On passing the vertebra the needle is slowly but firmly advanced. Usually it traverses the wall of the aorta at once, especially in adults where the aorta is shifted toward the left in the normal process of growth and aging. We have not attempted an aortogram in children; we believe it would be technically more difficult due to the position of the aorta in front of the centrum, more on the right side.

The needle snaps through the aortic wall in a manner quite like the perforation of the dura in a spinal puncture. Bright red blood immediately drips (does not spurt) from the needle, synchronously with systole.

A ten-inch section of plastic tubing and a 12 c.c. Becton-Dickinson Sana-Lok Syringe (filled with normal saline) are connected to the needle and the patency of flow in both directions is determined. The transparent

plastic tubing permits mobility of the syringe without disturbing the needle, and also permits observation of the pulsating column of blood, proof that the needle is correctly placed.

The syringe is filled with 12 c.c. of 75 per cent Neoiopax, or 70 per cent Urokon or Diodrast, and all is set for the injection. A physician rapidly injects the contrast material and times the exposure when all but 2 c.c. are injected. At this instant the exposure is made. The needle is withdrawn (unless a successive injection is desired), and as quickly as possible, a second film is made, usually within three to five seconds, in order to photograph the venous phase, or the phase of kidney visibility, the "nephrogram."

On completion of the aortogram the patients in our series have required no special care. They are observed by the anesthetist (as after all anesthesias) until they are fully awake. The patients can be discharged after three hours.

The contraindications to aortography are very few, and are the same as for an intravenous injection of any iodized material. It is required in our clinic that all patients shall have had an intravenous pyelogram without reaction. If this is the case there is no hesitation in doing the aortogram. Age, hypertension, and arteriosclerosis are not contraindications. If the patient's cardiovascular system can tolerate the anesthesia, an abnormal cardiac condition does not preclude the study. We believe the intraocular and intradermal tests of sensitivity to the contrast material worthless.

The indications for aortography include any suspected condition which might interrupt the arterial supply of an organ specifically, or modify the position, size and number of vessels in the abdomen. Aneurysms, neoplasms, cysts, thromboses, and placenta previa are the more common conditions selected for investigation, especially when doubts persist after the usual studies have been exhausted.

Summary and Conclusions

Ten cases have been presented illustrating the usefulness of aortography as a simple and relatively safe diagnostic roentgen procedure. Aortic thrombosis, abdominal aneurysms, neoplasms, placenta previa and the adequacy of the blood supply or organs are some of the conditions studied with profit by this technic. The limitations and risks of the procedure are outlined. Nine fatalities are reported from the literature. In our experience of thirty cases, high speed radiography has been unnecessary; an ordinary 200 MA x-ray unit with a Bucky apparatus has proved satisfactory, although we have recognized in two instances that serial films in rapid succession would offer distinct advantages.

"EXPERIENCE teaches us to be most on our guard to protect liberty when government's purposes are beneficent."—**Justice Brandeis.**

CALIFORNIA GROUP PLUGS PR PLAQUE

Pushing PR in its territory, the California Medical Association is attempting to lick the problems of patient-doctor misunderstanding at the grass roots. In a mailing to all its members, the California Medical Association is offering to provide every physician in its organization with a plaque, "To All My Patients," for display in his office. This plaque, designed by the AMA, urges patients to feel free to talk over questions regarding professional services and fees. Although the AMA is selling the plaque at one dollar a copy, the California society is underwriting the cost for its own members in an effort to gain wide circulation of the plaque. So far, more than 5,000 of California's 16,000 physicians have requested plaques.

1952 FUNDS APPROVED FOR MEDICAL EDUCATION SURVEY

A $39,650 budget to wind up activities of the Committee for the Survey of Medical Education has been approved by the AMA Board of Trustees. The committee reports that survey findings should be completed and sent to the publisher by June, 1952.

A representative sample of forty-one medical schools was studied with the idea of pointing up the basic problems facing medical education today. Broad objectives of the survey are: (1) to improve medical education to meet over-all health needs of the public; (2) evaluate the degree to which medical schools are meeting the need for physicians; (3) promote the advancement of medical science, and (4) inform the public of the nature, content and purposes of medical education.

RECENT TRENDS IN ESOPHAGEAL SURGERY*

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In the past decade surgery of the esophagus has made tremendous strides, not only in the field of carcinoma but also in the numerous other conditions which this organ is heir to. Diseases of the esophagus fall not only into the realm of the surgeon but into that of the general practitioner, the internist, the pediatrician, the anesthetist, the roentgenologist and the otorhinolaryngologist as well. It is for this reason that a presentation dealing with this subject is timely.

Anatomy

Some points in the surgical anatomy of the esophagus bear emphasis. It is well to remember that the esophagus, per se, is ten inches (25 cm.) in length, extending from the sixth cervical vertebra (cricoid cartilage level) to the tenth dorsal vertebra (esophageal hiatus level). The esophagologist, however, does not measure from the sixth cervical vertebra but rather from the alveolar margin, which adds an additional six inches (15 cm.) to its actual length; thus he bases his report upon a sixteen-inch (40 cm.) structure.

The esophagus has three normal curves and three physiologic constrictions. Its three curves or flexures are placed in the following manner: in the neck it curves to the left, as it descends in the thorax it curves to the right, and as it approaches the esophageal hiatus it curves again to the left. These flexures are of practical importance, since they may determine the proper side of approach. The three physiologic constrictions are located (1) at the level of the cricoid cartilage (sixth cervical level), (2) at the arch of the aorta and (3) at the esophageal hiatus. It is at these constrictions that the greatest amount of irritation takes place and the greater number of pathologic lesions are observed. Most foreign bodies are impeded in their path downward at the first physiologic constriction and are therefore found on a level with the sixth cervical vertebra. In locating a swallowed foreign body it is all-important, therefore, to order not only a roentgenogram of the chest but one of the neck as well.

The relation of the vagus nerves to the esophagus should be stressed, since these nerves may be involved or must be sacrificed in some esophageal procedures. Although much has been written recently regarding the anatomy of the vagi and although numerous patterns have been described, in the main it may be stated that the left vagus nerve passes along the anterior aspect of the esophagus, intimately hugs the food pipe and is the smaller of the two vagi. The right vagus passes posteriorly, does not hug the esophagus and is larger.

To know the boundaries of the so-called "esophageal triangle" is to make identification and isolation of the supradiaphragmatic portion of the esophagus a simple and rapid maneuver. This anatomic triangle is bounded in front by the heart, behind by the descending aorta and below by the diaphragm.

Almost every text, monograph or recent article calls attention to the poor blood supply of the esophagus. I cannot agree with this teaching. To emphasize this point one needs only to divide the esophagus into upper (cervical), middle (thoracic) and lower (abdominal) parts. The upper part of the organ is supplied voluminously by the inferior thyroid artery; the middle or thoracic part is supplied by aortic, bronchial and intercostal branches; the lower part is well supplied by the left gastric and the inferior phrenic arteries. In my work I have demonstrated, and also presented in a recent motion picture of the actual procedure, the removal of the entire thoracic esophagus, both supra-aortic and infra-aortic portions, from its mediastinal bed. After this the esophagus was transected at its entrance into the stomach, and brisk, bright red ar-

*Presented at the Western Colorado Spring Clinics, Grand Junction, Colorado, on April 1, 1951. From the Departments of Surgery, University of Illinois, Cook County Graduate School of Medicine, Cook County Hospital, American and Alexian Brothers' Hospitals.

terial oozing was noted. I feel, therefore, that much more can be expected of the esophagus in its ability to heal, particularly if careful sutures are placed and if tension is avoided.

Atresias and Tracheo-Esophageal Fistulas

Various combinations and degrees of these anomalies are possible. The most common such defect is one in which the proximal end of the esophagus terminates as a blind pouch and the distal end joins the trachea to form a tracheo-esophageal fistula.

Such a defect is to be suspected if the newborn baby presents a symptom complex revealing the three "C's," namely, coughing, choking and cyanosis. Especially is this true if there is an abnormal amount of drooling and rhinorrhea. These symptoms should suggest an impending surgical emergency. The roentgenologist is of inestimable value in determining the type and site of such lesions by merely noting the presence or absence of gas in the stomach and bowel, and by injecting a small amount of lipiodol through a nasal catheter into the proximal portion of the esophagus (barium should never be used).

The side of approach to atretic lesions and tracheo-esophageal fistulas is open to controversy. It is true that if only a small narrow atretic portion in the esophagus exists the right-sided approach is preferable. The reasons for this are that the arch of the aorta does not interfere with exposure, only the azygos vein need be ligated and severed to visualize the esophagus thoroughly, and an end-to-end anastomosis may be accomplished readily. However, if the atresia or the fistula involves a longer segment of esophagus, an end-to-end esophageal anastomosis cannot be accomplished. Thus if one has utilized a left-sided approach it is an easy matter to open the diaphragm, mobilize the stomach, and perform an intrathoracic esophagogastrostomy. It should be remembered also that in the newborn and in the young the aorta is not the barricading impediment that it is in older persons, since in the young it can readily be retracted out of the way.

If a few of these pertinent facts are kept in mind, not every "blue baby" will be thought to present the tetralogy of Fallot, and an immediate and proper work-up will be instituted, thus saving many such children from unnecessary deaths.

Diverticula of the Esophagus

Esophageal diverticula are classified into pulsion and traction types. Surgically we are interested in the pulsion type of diverticulum, which occurs either in the neck (cervical) or immediately above the diaphragm (epiphrenic). The so-called traction type is usually located in the region of the tracheal bifurcation where the chronically inflamed tracheal lymph nodes are found. These rarely produce symptoms, since they usually have a wide ostium which forms their neck. However, more important than the classification is appreciation of the pathologic physiology which underlies the formation of this condition. It is believed that one of the prerequisites for the pulsion type is a weakness in the muscular wall, which permits herniation of the mucosa through the weak part and results in a diverticulum. No symptoms are produced as long as the opening into the diverticulum is large. However, as food slowly packs into the diverticulum the latter increases in size and drops downward. This process continues until the weighted sac hangs downward and produces pressure upon the esophagus, obstructing it. It should be noted that in such a far-advanced stage food has easier access to the diverticulum than to the esophageal lumen proper. Dysphagia is the outstanding complaint, and diverticulitis, perforation and mediastinitis are the more common complications.

In this day of chemotherapy, improved surgical technic, modern anesthesia and proper postoperative care, the one-stage diverticulectomy is preferred over the two-stage procedure. Although removal of the diverticulum is preferred, diverticulopexy still has its place. The latter procedure, in which the diverticulum is dissected free and stitched upward to the surrounding structures, is reserved for the poor risk patient with marked symptoms. When this has been done, food does not have access to the down-

ward-hanging diverticulum and thus the symptoms are relieved.

Cardiospasm is neither cardiac nor spastic. It is a condition in which there is dilatation, hypertrophy and tortuosity of the esophagus unassociated with an obstructed esophageal hiatus. Theories as to its production are numerous and will not be discussed here. This condition is twice as common in females as in males, and in a rather large percentage of cases a history of emotional strain or psychic trauma can be elicted.

The outstanding symptoms are dysphagia, regurgitation and pain. Complete esophageal obstruction for varying periods has been noted, even to a point where the patient cannot swallow his own saliva. The pain is usually retrosternal and varies from mild to severe. Morphine addiction has resulted from this condition.

The roentgen film is of particular help in diagnosing cardiospasm. Recently Kramer and Ingelfinger described the mecholyl test as an aid to the diagnosis of cardiospasm. When mecholyl, a parasympathomimetic drug, is injected into a normal person there is only a slight increase in tone and magnitude of esophageal contractions. However, in patients with cardiospasm, marked esophageal spasm and contractions follow administration of the drug. Complications that may be associated with the condition are bronchitis, bronchiectasis and pulmonary abscess. All of these may result from aspirated material regurgitated from the esophagus.

Medical management includes psychotherapy, antispasmodics and dilatation. Surgically many types of procedures have been advised, which include cardioplasties, cardiomyotomies, resections and anastomoses. The operation of choice is Heller's operation, which is a transabdominal extramucous esophagocardiomyotomy. The procedure is simple to do with a negligible morbidity and mortality. The postoperative results are excellent.

Hiatus Hernia

The following three types of esophageal hiatal hernias have been described: (1) the para-esophageal type, in which the stomach herniates through the esophageal hiatus and lies parallel with an esophagus of normal length; (2) the sliding type, in which the stomach is herniated through the hiatus but has pushed an esophagus or normal length upward, thus rendering it tortuous, and (3) the hiatal hernia with a congenitally short esophagus, in which the upper part of the stomach is herniated through the hiatus because the esophagus has never attained its normal length.

The last-mentioned type can be diagnosed by the esophagologist when he records the appearance of gastric mucosa at an unusually high level, indicating a short esophagus. Hiatal hernias may be observed as a coincidental finding in taking gastro-intestinal roentgen films. Such hernias rarely if ever produce symptoms. Although many advocate leaving them alone, the danger of strangulation of such a herniated segment of stomach, with resulting putrid empyema and rapid death, must be kept in mind.

Many patients with hiatal hernias complain of epigastric distress, bloating, belching, anorexia, loss of weight and retrosternal pain. Such cases have been diagnosed erroneously as disease of the gallbladder, peptic ulcer, gastritis or coronary disease. These errors can be avoided if the possibility of hiatal hernia is kept in mind and if roentgen films are taken with the patient in the Trendelenburg position, which would readily demonstrate herniation that might otherwise be overlooked.

The surgical repair of a para-esophageal hernia or a sliding type of hernia is simple, since all that is necessary is reduction of the herniated stomach and tightening of the esophageal hiatus. It is the hernia associated with a congenitally short esophagus that presents a problem. For such a lesion I have devised a procedure by which the hiatus is incised and enlarged and the defect increased. This is accomplished by herniating more stomach into the thoracic cavity, thus removing the pull on the congenitally foreshortened esophagus. The esophageal hiatus is then loosely sutured around the stomach. In the poor risk patient phrenicotomy might produce gratifying results.

Portal Hypertension

This condition results from increased pressure in the portal system and is almost always observed at the lower end of the esophagus (recent studies reveal, however, that varices may occur in any part of the esophagus). Portal hypertension may be due to intrahepatic or extrahepatic causes. The usual condition causing intrahepatic block is cirrhosis of the liver. Extrahepatic block may be due to phlebitis, thrombosis, fibrous stenosis or cavernomatous transformation of the portal vein; it may be congenital or acquired.

One does not refer to Banti's disease in these modern times, but rather to Banti's syndrome. This is characterized by splenomegaly, anemia, esophageal varices, ascites and leukopenia. The syndrome has been produced experimentally by Whipple, who blocked the portal vein. If the block is due to an intrahepatic lesion the liver function tests will give positive results, whereas if the portal block is extrahepatic the results of these tests are usually negative. If the condition is in a quiescent stage it may be safe to take an esophagram, which will reveal the pathognomonic "beaded" appearance at the lower end of the esophagus.

Since hemorrhage from a ruptured esophageal varix may be fatal, definite measures must be taken to prevent recurrence. Some of the therapeutic procedures advocated are injection of the varix with sclerosing agents, tamponade with oxycel or gelfoam through the esophagoscope, ligation of the coronary vein, esophagogastric resention to remove the "pile-bearing" area, and various forms of portacaval shunts. More recently splenic artery ligation, splenectomy, and hepatic artery ligation have been advocated. The author has performed three of the latter procedure following the suggestion of Rienhoff.

Portacaval shunts have attained a certain degree of popularity in the past few years, and various types of anastomoses have been attempted in order to shunt the blood from the portal to the caval system. It is my opinion that, rather than the time-honored end-to-side portacaval shunt (Eck fistula), a lateral anastomosis between the portal vein and the inferior vena cava will prove to be the method of choice. This is accomplished best through a right thoracolaparotomy incision in which the costal arch is divided, making it possible to dislocate the right lobe of the liver into the right thoracic cavity. When this approach is used, the portal vein and the inferior vena cava practically approximate themselves, thus avoiding the necessity of dissecting out the common duct and the hepatic artery. It seems preferable also to permit some portal blood to continue through the liver rather than make a complete division of the portal vein. Only time will tell the efficacy of these measures.

Carcinoma of the Esophagus

What was considered a hopeless and inoperable condition only a decade ago presents at least a worthwhile challenge to the doctor of today. If present impressions are correct, the overall outlook and prognosis for the patient with carcinoma of the esophagus is better than the 5 per cent, five-year "cure" for carcinoma of the stomach.

It is of practical value to divide the esophagus into zones. Many such divisions have been described. One that has served me well divides the organ into three zones, namely, an upper (Zone 1), which extends from the beginning of the cervical esophagus to the manubrium sterni; a middle (Zone 2), which extends from the manubrium sterni to the inferior pulmonary ligament, and a lower (Zone 3) from the inferior pulmonary ligament to the esophagogastric junction.

Early diagnosis is of paramount importance in cases of this type of carcinoma, since it is by this means that the survival rate can be increased. One often hears mention of a "change in stool habit" as a probable symptom of carcinoma in the lower intestinal tract; in like manner it may be stated that "any persistent change in the swallowing habit is an indication of carcinoma of the esophagus until proved otherwise." Were this dictum to be heeded and such cases further investigated by means of esophagoscopic and roentgen study, then many esophageal neoplasms would be operated upon earlier.

Treatment

Needless to say, preoperative and postoperative therapy for these patients is of the utmost importance, and much has already been written concerning these phases.

For lesions located in Zone 1 the Wookey procedure has been used, especially for a tumor situated in the cervical portion of the esophagus. Recently, however, lesions involving the superior mediastinal segment of the esophagus as well as the cervical part have been approached by a more radical procedure, which removes the thoracic portion of the esophagus and most of the cervical portion. This is accomplished through a thoracic phase of the operation and a cervical phase. The operation is completed by an intracervical end-to-side esophagogastrostomy. In placing the mobilized stomach in the neck the surgeon may find that the thoracic inlet impinges upon the stomach. If this is the case it may be necessary to remove the inner half of the clavicle and the first rib. Whether the mobilized stomach should be placed behind or in front of the arch of the aorta is a moot question and must be decided by the surgeon at the time of operation.

Lesions of Zone 2, or those which involve most of the thoracic portion of the esophagus, are removed by a rather standardized procedure in which a wide esophageal resection is accomplished, followed by an end-to-side supra-aortic esophagogastrostomy or esophagojejunostomy. When the jejunum is used it may be necessary to do a Roux "Y" anastomosis or some modification thereof.

Lesions of Zone 3 include not only the lower end of the esophagus but the gastric cardia as well. I prefer a thoracolaparotomy incision in which a left rectus incision extends across the left costal arch, dividing it and then continuing into the eighth intercostal interspace. The diaphragm is divided to and through the esophageal hiatus, and the esophagus is mobilized from the aortic arch to its entrance into the stomach; the latter is then mobilized to the pylorus. The right gastric and gastro-epiploic arteries should be left intact. An esophagogastric resection is then accomplished and is followed by an end-to-side esophagogastrostomy. If necessary the spleen and part of the pancreas are removed.

In most of my esophageal operations water seal drainage is preferred, and a Levine intragastric tube is permitted to remain in place for the first three postoperative days. I cannot subscribe to the teaching that these tubes may be harmful. Routine portable roentegenograms are taken twenty-four hours after operation to determine the pulmonary status.

Palliative Procedures

Although the primary lesion may be extensive or may even show distant metastases, it is always worthwhile to attempt a palliative resection, thereby improving the patient's general condition and sense of well being. This is explained by the fact the infection is reduced and anemia is corrected. In the event that it is impossible to remove the primary growth, some short-circuiting procedure, such as an esophagogastrostomy or an esophagojejunostomy may make the patient's remaining days more comfortable.

Benign Tumors

Lipomas and myomas are the most common of benign tumors which have been found in the esophagus. Owing to the constant effort of swallowing, such tumors have a tendency to become tremendously elongated and pedunculated. They have been known to be coughed up and to appear in the patient's mouth. If this occurs it may be possible to remove the lesion by means of a snare passed orally. If the tumor, however, is lower down, esophagotomy with removal of the tumor and primary closure of the esophagus is the treatment of choice.

Perforations of the Esophagus

Both spontaneous and traumatic rupture of the esophagus have been described in the literature. A spontaneous rupture is an interesting lesion and is not so extremely rare as it was formerly thought to be. If one has the condition in mind it should be possible to diagnose it preoperatively. It is found most frequently in male patients who are victims of alcoholism, and is asso-

ciated with a preliminary severe bout of vomiting; this is followed by agonizing pain, which may be either thoracic or abdominal. The patient usually goes into rapid and profound shock. This condition cannot be confused with a ruptured peptic (gastric or duodenal) ulcer, since with the ruptured ulcer the pain appears first and is followed by vomiting, whereas with the spontaneous rupture vomiting comes first and is followed by pain.

The ruptured esophagus is associated frequently with surgical emphysema, which can be felt in the neck. Whenever such emphysema is noted one should think immediately of spontaneous esophageal perforation and verify this with a flat roentgen film, which will reveal a spontaneous hydropneumothorax. Aspiration of the chest has been done in some cases, resulting in the discovery of food particles or vomitus. Formerly the mortality was thought to be 100 per cent; however, with early diagnosis and modern surgical therapy the outlook is much better today, and some patients are definitely being saved.

Mediastinitis

Perforation of the esophagus may result in a serious condition, mediastinitis. Malignant tumors or foreign bodies are the two main causes of perforation. Since carcinoma develops gradually, it does not give rise to as extensive an infection of the mediastinum as do other lesions.

Perforations caused by foreign bodies are of more practical importance. At present it is felt that mediastinal infections which extend deeper than the fourth or the fifth thoracic vertebra cannot be adequately drained by means of cervical mediastinotomy and must be treated by posterior mediastinotomy. Chemotherapy is an all-important adjunct for this type of infection.

In a presentation of this type it is impossible to mention every aspect of esophageal pathology. Only the more common and frequent conditions have been stressed. The esophagus has been just as much of a "hermit" as the pancreas; however, recently it has been brought within reach of the well-equipped and well-trained surgical team. That this organ is accessible to modern diagnostic and therapeutic procedures is due to the efforts of such men as Franz Torek, Sauerbruch, Garlock, Sweet, Nissen and others too numerous to mention. Their contributions have enabled the modern surgeon to save many lives that were doomed a decade ago. Today the future for esophageal surgery is most promising.

Summary

The more common pathologic conditions which affect the esophagus have been discussed, and their treatments have been evaluated. The importance of physiopathology as an aid to early diagnosis has been stressed.

Since the advent of improved diagnostic methods, modern anesthesiology, chemotherapy, skillful surgical technic, and proper preoperative and postoperative care the esophagus has been brought into the realm of surgical safety.

A SIMPLE METHOD FOR PIERCING EARS

ROBERT B. PATTERSON, M.D.
LOVELAND, COLORADO

Sometimes simple small procedures not even discussed in formal medical training can make a great deal of difference in the general practice of medicine. Perforation of the ear lobe for earrings has a very minor place in medicine but the skill for accomplishment of so minor a task may well bring many thanks from grateful patients.

One of the simplest and least traumatic methods has been used recently by the author with very satisfactory results. A small, light weight, gold earring without angular surfaces that can catch on clothes or bed linen is chosen. That part of the ring which is to be inserted through the ear is inserted into the lumen of the smallest gauge hypodermic needle possible. This will usually be a needle of between 20 and 18 gauge.

The needle and the earring are now separated and sterilized and the lobe of the ear is cleansed and painted with an antiseptic. A minimum amount of novocaine is

used to infiltrate the site of perforation and the hypodermic needle is forced through the ear lobe. The end of the metal earring is inserted into the lumen of the needle and kept so engaged while the needle is withdrawn from the ear lobe.

This accomplishes the placement of the ring through the lobe with a minimum of trauma and furnishes a maximum of control for proper location of the earring. The perforation, for best cosmetic effects, is best accomplished from anterior to posterior. This brings the actual earring through from posterior to anterior and reverses the usual or permanent method of earring insertion. The original earring will be left in for about three weeks without removal so that care should be taken that the jewelry can be worn in reverse position without embarrassment to the patient or the doctor.

Warning: Ears are peculiarly susceptible to keloid formation. Never use a cautery or "electric needle!"

Case Report

FAILURE OF ANTIHISTAMINE THERAPY IN SEVERE SULFADIAZINE HYPERSENSITIVITY*

CALVIN R. MacKAY, M.D.
MERIDIAN, MISSISSIPPI

Hypersensitivity to the sulfonamide group of drugs with skin manifestations is well known and it is not the purpose of this paper to review in detail the many types of skin reactions which these compounds may cause. Suffice it to say that the usual reactions include simple pruritus, urticarial, macular and vesicular eruptions of varying types and severity.

Although ocular participation in the allergic response may occur, it is usually not prominent. Pain, burning, and lacrimation of a mild degree with evidence of mild inflammation of the conjunctivae are the usual manifestations.

Involvement of the mucous membranes in hypersensitivity reactions to the sulfonamides is not common and seldom of any consequence. The lesions usually consist of vesicular or denuded and inflamed areas of the buccal membranes, tongue, and oropharynx.

Fortunately, the dermal, ocular, and membranous response to hypersensitivity to the sulfonamides is usually not so severe as to cause permanent damage or endanger the life of the patient, and the disappearance of lesions in the great majority of cases is prompt upon discontinuance of the offending drug, and especially hastened by the use of antihistaminic therapy. However, occasionally marked reactions occur which are progressive despite all therapy, and which become so severe as to jeopardize the life or well-being of the patient, independent of the drastic changes in the blood picture and kidney status, which are so well known. It is to emphasize the severe dermal, ocular, and membranous reactions to hypersensitivity to the sulfonamides, which may occur, that this contribution is made.

REPORT OF CASE

P. K., a part-Hawaiian girl, aged 9, was first seen in the out-patient clinic of Kahuku Hospital and diagnosed as having inguinal lymphadenitis and lymphangitis secondary to an infected excoriation of the left knee of several days' duration. Examination otherwise was negative. The temperature was 103 F.; the white count was 145,000, with 87 per cent polymorphonuclear leukocytes and 13 per cent lymphocytes. She had never had sulfonamide therapy before and there was no history of allergy in the patient or immediate family. She was placed on one gram of sulfadizine and an equal amount of sodium bicarbonate every six hours and advised to use hot magnesium sulfate soaks on her knee. She was seen each day for the next three days, during which time the infectious process subsided; the white count became normal and the urinalysis remained negative. When seen on the fourth day, however, the patient complained of generalized itching, and burning of the eyes. An examination revealed moderate inflammation of the conjunctivae, associated with excessive lacrimation and blepharospasm, and a diffuse macular rash on the trunk and antecubital spaces. The temperature at this time was 103 F.; the white count was within normal limits, and the urine was negative. Sulfadiazine was discontinued; she was give an initial dose of tripelennamine hydrochloride, and hospitalized for observation. Within a few hours the rash had become dark red in color, and covered nearly the entire skin surface.

The patient's condition became rapidly worse. The pulse became very rapid and she appeared toxic. Within twelve hours after the onset of

*From the United States Public Health Service Treatment Center, Meridian, Mississippi. The author is formerly of Salt Lake City, Utah.

the eruption, and despite adequate doses of tripelennamine, diphenhydramine, and ephedrine, the lesions had become dark and coalesced, with the formation of multiple areas of giant bullae, some of which ruptured, discharging a clear serous fluid. The face became edematous and examination of the eyes revealed bilateral uleration of the corneae, accompanied by marked conjunctivitis and large vesicles on the eyelids. The lips were swollen and the mucous membrane of the mouth and pharynx was ulcerated and bleeding. The patient was unable to talk or to swallow, and there was a continuous stream of blood-tinged saliva running from the corners of her mouth. The palms and feet were beginning to desquamate and the vulva and perineum were so edematous and ulcerated that the patient was unable to void, necessitating catheterization. The bullae of the skin that ruptured left a raw surface, oozing blood and serum.

Because the patient presented the clinical picture of extensive second- and third-degree burns, with great loss of blood and serum through the skin, accompanied by evidence of shock, whole blood and plasma, alternating with dextrose and Ringer's solutions, were given intravenously, together with vitamin B complex, ascorbic acid and rutin. Since she was unable to swallow, liquid feedings and protein concentrates were given by gastric gavage, which was well tolerated. Crystalline penicillin, 50,000 units, was given every three hours to prevent infection.

Pressure bandages, consisting of petrolatum gauze, gauze flats, mechanic's waste, and elastic bandages, were applied to face, trunk, and extremities, leaving only room enough to administer intravenous fluids.

Atropine 1 per cent was instilled into the eyes in sufficient quantity to keep the pupils dilated, warm boric acid compresses were applied for half an hour several times a day, and the eyes were protected by boric acid ophthalmic ointment and pressure dressings between compresses.

The red blood count, hemoglobin, and hematocrit showed the effects of loss of cells and extracellular fluid as expected, and were used as an index to replacement therapy. No agranulocytosis occurred, the white count and differential remaining normal throughout, except a slight increase in eosinophiles (3 - 5 per cent).

Because of the massive loss of extracellular fluid through the skin, the urine output the first twenty-four hours was less than 50 c.c., but remained free of albumin and cells.

After vigorous replacement therapy, the shock-like picture subsided; the urine output increased, and the immediate danger to life subsided. Infusions and the tube feeding were continued and at the end of a week the edema about the eyes and mouth had lessened; the lesions of the buccal membranes were beginning to heal, and the patient was able to swallow with difficulty. Although the antihistamines appeared to have some mild sedative and possibly analgesic value, they appeared to have no effect whatsoever on the morbid process, and after several days' adequate trial, were discontinued.

The pressure dressings were untouched for a week, after which they were changed, great sheets of loose skin coming off with the dressings, beneath which beginning epithelialization had occurred.

Although the conjunctivitis, photophobia, and edema of the eyelids subsided, the ulcerations of the cornea were extremely resistant to therapy, and cauterization was necessary to limit spreading. Within a few days after this was done, there was evidence of healing.

At the end of four weeks the patient was ambulatory and was able to be discharged. At this time, beyond broad areas of depigmentation, the skin appeared normal, and was beginning to assume its original color and texture. The eruptions of the mucous membranes were practically invisible. The only apparent permanent damage was to the eyes, examination of which revealed bilateral permanent corneal scars, with moderate loss of vision.

Summary and Conclusions

The importance of the immediate treatment of the circulatory collapse due to the great decrease in blood volume from loss of extracellular fluid in acute bullous-type eruptions is similar to that seen in severe burns and requires similar vigorous therapy. The use of pressure dressings in this type of dermatosis has previously been reported and proved eminently successful in this case. The failure of antihistaminics to either stop or prevent progression of the morbid process was observed.

It is to be hoped that adrenocorticotropic hormone and adrenal cortical hormones, which are being given clinical trial, may prove of real benefit in severe dermal and ocular hypersensitivity reactions such as that presented in this paper.

AMA PAYS $20,000 IN 1952 FOR CHRONIC ILLNESS

The AMA has pledged continued financial support to the Commission on Chronic Illness in the amount of $80,000 to be paid over a four-year period. The commission, an independent national agency, is conducting an intensive study of chronic illness—one of the most important health problems of America today. This year's installment of $20,000 was recently turned over to the commission. A $300,000 budget set by the commission for the coming four-year period has been met by twelve contributing organizations.

AMA GROUP ACTS AS LIAISON WITH LEGION

The AMA Board of Trustees recently appointed a liaison committee of Drs. Elmer Henderson, Chairman, Perrin H. Long, George F. Lull, Henry B. Mulholland, Harvey B. Stone and Walter B. Martin to confer with the American Legion on matters dealing with national health and medical care problems. On March 1, this group met with the American Legion Committee on Rehabilitation in Washington, D. C. The committee will meet again in April with Legion representatives.

Organization

WYOMING
State Medical Society

PROGRAM

Forty-Ninth Annual Meeting

WYOMING STATE MEDICAL SOCIETY

PAUL R. HOLTZ, M.D., President

Lander, Wyoming

June 5, 6, 7, 1952

WEDNESDAY NIGHT — June 4, 1952

8:00 p.m.—Smoker at the Lander Country Club.

THURSDAY — June 5, 1952

8:30-10:00—House of Delegates.

10:00-10:30—Opening Address: Harvey A. Carson, Mayor of Lander. Response: Dr. Earl A. Bovenmeyer, President, Fremont County Medical Society.

10:30-11:00—"Infectious Erythema," Dr. George P. Lingenfelter, Denver, Colorado.

11:00-11:30—"The Management of Acute Intestinal Obstruction," Dr. Kenneth C. Sawyer, Denver, Colorado.

11:30-12:00—"Treatment of Acute Head Injuries," Dr. Charles G. Freed, Denver, Colorado.

12:00- 2:00—Lunch.

2:00- 2:30—"The Surgical Treatment of Carcinoma of the Prostate," Dr. Daniel R. Higbee, Denver, Colorado.

2:30- 3:00—"Prognostic Factors in Bleeding Peptic Ulcers," Dr. Francis A. Barrett, Cheyenne, Wyoming.

3:00- 3:30—Intermission.

3:30- 4:00—"The Effect of Morbidity of Abdominal Surgical Wounds Managed Without Postoperative Dressings," Dr. John R. Pratt, Sheridan, Wyoming.

4:00- 4:30—Pathological Conference, sponsored by Traveling Tumor Clinic: Drs. Sam S. Zuckerman, R. E. Dixon, John B. Gramlich, Cheyenne; Mason Morfit, Denver; G. M. Knapp, Casper.

4:30- 5:00—Mental Health Program: Dr. Don W. Herrold, Cheyenne, Wyoming.

7:30 p.m.—House of Delegates.

FRIDAY — June 6, 1952

8:30- 9:30—House of Delegates.

9:30-10:00—"The Neglected Ear," Dr. George B. Ely, Salt Lake City, Utah.

10:00-10:30—Intermission.

10:30-11:00—"Surgical Treatment of Mitral Stenosis," Dr. Preston R. Cutler, Salt Lake City, Utah.

11:00-11:30—"Surgical Diseases of the Spleen," Dr. Charles W. McLaughlin, Omaha, Nebraska.

11:30-12:00—"The Diagnosis and Treatment of Cancer of the Colon," Dr. Kenneth C. Sawyer, Denver, Colorado.

12:00- 2:00—Lunch.

2:00- 2:30—"Intervertebral Disc Injury," Dr. Charles G. Freed, Denver, Colorado.

2:30- 3:00—Veterans' Administration: Drs. Pearce and Burnett, Cheyenne, Wyoming.

3:00- 3:30—Intermission.

3:30- 4:00—"Tuberculosis of the Pelvis," Dr. Oscar J. Rojo, Sheridan, Wyoming.

4:00- 4:30—"Treatment of Vesical Neck Disfunction in Middle-Aged Women," Dr. Daniel R. Higbee, Denver, Colorado.

4:30- 5:00—"The Reflections of a Professor Emeritus," Dr. George P. Lingenfelter, Denver, Colorado.

7:00 p.m.—Cocktail Party, Noble Hotel.

8:00 p.m.—Banquet, Noble Hotel.

SATURDAY — June 7, 1952

8:30- 9:30—House of Delegates.

9:30-10:00—"Urgent Abdominal Problems in Infancy and Childhood," Dr. Charles W. McLaughlin, Omaha, Nebraska.

10:00-10:30—Intermission.

10:30-11:00—"Neuralgias of the Head and Neck," Dr. George B. Ely, Salt Lake City, Utah.

11:00-11:30—"Bronchogenic Carcinoma, Its Diagnosis and Treatment," Dr. Preston R. Cutler, Salt Lake City, Utah.

11:30-12:00—"Syphilis; Course and Management," Dr. Evan W. Thomas, New York City, N. Y.

There will be entertainment for the members of the Woman's Auxiliary.

Auxiliary

AUXILIARY

We have received literature on the Twenty-ninth Annual Meeting of the Woman's Auxiliary to the American Medical Association, to be held at the Conrad Hilton Hotel in Chicago, Illinois, June 8-13, 1952. We quote a part of the invitation: "A cordial invitation is extended to all members of the Woman's Auxiliary to the Amer-

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Ann. Allergy, 8:682, Sept.-Oct.

ican Medical Association, their guests and guests of physicians attending the convention of the American Medical Association, to participate in all social functions and attend the general sessions of the Auxiliary. Headquarters will be at the Conrad Hilton Hotel. Tickets will be available at the registration desk only. Please register early and obtain your badge and program. Registration hours are as follows: Sunday, 12:00 to 4:00 p.m.; Monday, Tuesday and Wednesday, 9:00 a.m. to 4:00 p.m.; and Thursday, 9:00 a.m. to 12:00 m. Mrs. Henry Schmitz and Mrs. Warren W. Young, chairmen, Committee on Arrangements."

Also at this time the Woman's Auxiliary to the Wyoming State Medical Society would like to extend a cordial invitation to all members of the Auxiliary to attend the annual meeting to be held in Lander, Wyoming, June 5, 6, and 7, 1952. The newly organized Woman's Auxiliary to the Fremont Medical Society, with Mrs. E. L. Sonnenschein as President, will be hostess to the convention.

We are pleased with the work being done by the Woman's Auxiliary to the Natrona Medical Society on nurse recruitment. In March when Casper Junior College had its first capping exercise for the student nurses the Auxiliary held a reception after the capping for the student nurses, their parents and relatives. Members of the "Future Nurses," a high school club, were also guests at the reception. And recently the Auxiliary asked Mrs. Gordon Whiston to speak to the Future Nurses Club on "The Nurse and Physical Therapy," giving the girls a better understanding about the care of polio and cerebral palsy cases and the part of the nurse in such cases.

MRS. FRANKLIN YODER,
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LILLY REDUCES PENICILLIN PRICES

Eli Lilly and Company of Indianapolis announced a substantial reduction in the price of penicillin on March 26, 1952. The reductions ranged from 10 to 38 per cent on various forms of the drug, with the average a healthy 25 per cent.

This is the second time in the last three months that Lilly's has lowered the price of penicillin. The public, which last year spent an estimated $300,000,000 on penicillin and streptomycin alone, stands to have its medicine bill reduced considerably in 1952. One out of three Americans received an injection of penicillin during 1951.

Striking improvements in production methods are chiefly responsible for the continuing downward trend of prices. Little more than 10 years ago, penicillin cost about 80 times the price today. In addition, improved forms of the drug are 10 times as potent and last six times as long as the old product.

Squarely in the middle of the fast-moving spiral of higher costs and prices lies a postwar rarity of a product that is costing less as it gets better.

NEW MEXICO
Medical Society

ALBUQUERQUE DOCTORS HONORED

Four doctors were honored by Bernalillo County Medical Society at its meeting on April 2. Doctors Evelyn Frisbie, Carl Mulky, and A. B. Leeds were presented with a Fifty-Year Service Recognition Certificate for their half-century of devotion to their patients and to the medical profession.

At the same meeting Dr. J. W. Hannett was presented a Distinguished Service Recognition Certificate from the County Society for his contributions to the medical profession during his forty-four years of active medical practice.

The presentations were made by Dr. M. K. Wylder, who was the first doctor in Albuquerque to receive a Fifty-Year Service Certificate. Dr. Wylder was honored at a meeting of the County Society in October, 1951.

Doctors Mulky, Frisbie, Hannett, and Wylder are all Past Presidents of the Bernalillo County Medical Society and the New Mexico Medical Society. Dr. Leeds moved to Albuquerque in 1947 from Chickasha, Oklahoma, where he had practiced since 1902.

ALBUQUERQUE DOCTORS HONORED—Left to right: Doctors Evelyn F. Frisbie, A. B. Leeds, Carl Mulky, J. W. Hannett, M. K. Wylder.

COLORADO
State Medical Society

Obituaries

L. HENRY BECK

Dr. L. Henry Beck, who practiced in Manitou Springs for almost half a century, died in Colorado Springs on March 29, 1952, in his eighty-fifth year. Born in Fort Seneca, Ohio, on November 17, 1867, educated at Heidelburg University, Tiffin, Ohio, and at the Ohio Medical College, he was awarded his M.D. degree by the Gross Medical School of Denver in 1898 and licensed to practice medicine the following year. He settled in Manitou and carried on an active practice until his retirement in 1948. Dr. Beck is survived by his widow.

ALLEN H. HARRIS

Dr. Allen H. Harris of 935 Detroit Street, Denver, Colorado, died April 13, 1952, at the age of 83. He was born in Licking County, Ohio, and was graduated from the Cleveland College of Physicians and Surgeons in 1893. He was licensed to practice medicine in the State of Colorado in 1899. His specialty was surgery. Before coming to Denver, he was licensed to practice medicine in Ohio.

Besides belonging to the Denver County, Colorado State, and American Medical Associations, he was a member of Oriental Lodge No. 87, A. F. and A. M.

Dr. Harris was an active member of the Presbyterian and Mercy Hospital staffs during his active life, and took part in state and county medical organization.

GEORGE R. HAGEMAN

Dr. George R. Hageman was born in Washington, Kansas, January 14, 1891, and attended the University of Michigan School of Medicine, from which he graduated in 1919. Besides the Doctor of Medicine, he acquired the degree of Bachelor of Science. He came to Colorado and was licensed in 1930, after having practiced medicine in Michigan, New York and Montana.

He was a member of the staff of the Longmont Hospital, specializing and heading the Department of Oto-ophthalmology. He died March 3, 1952, at his home in Longmont.

Because of his active membership in the Boulder County, Colorado State, and American Medical Associations, his passing will be felt as a real loss to the profession.

CHARLES E. SEVIER

Dr. Charles E. Sevier, long known in Colorado orthopedic circles, died at the age of 62 on March 8, 1952, following an operation in Denver. He was born in Brownsville, Tennessee, on May 23, 1889. Graduation from the Johns Hopkins Medical School in 1916 was followed by a thorough postgraduate training in American hospitals and abroad, interrupted by overseas service in World War I. Settling in Colorado for his health, he first practiced orthopedic surgery in Colorado Springs, but in 1926 moved to Denver, where he had an active career in the private practice

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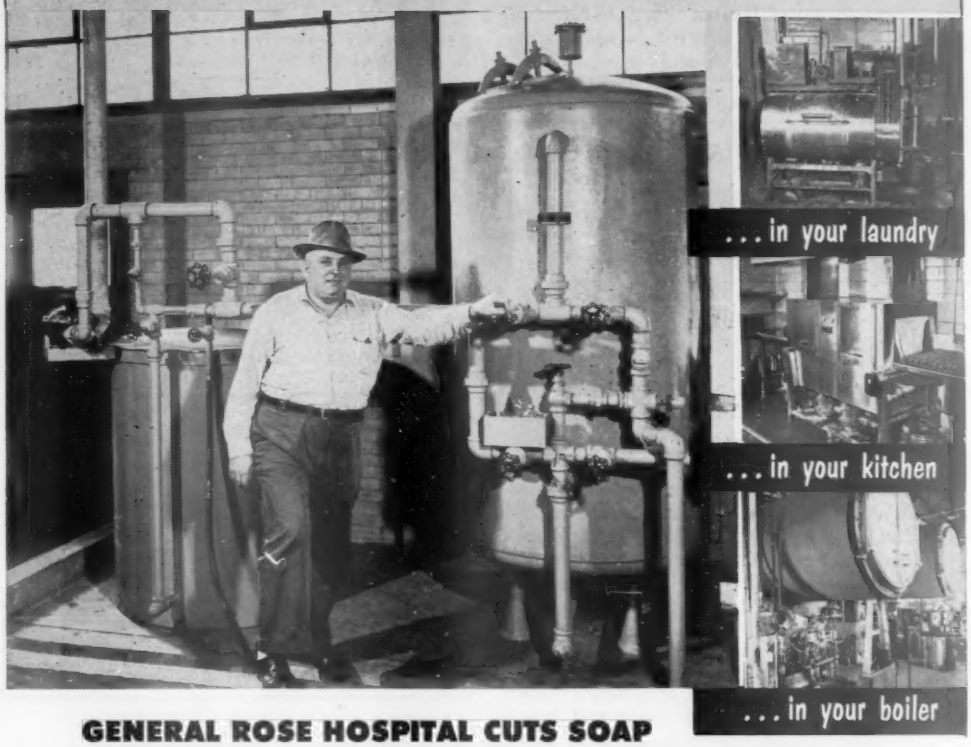

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of orthopedics, including an Associate Professorship at the University of Colorado School of Medicine. In 1941 he returned to Colorado Springs and practiced his specialty until his retirement in 1949. Dr. Sevier was certified by the American Board of Orthopedic Surgery, and was a member of the American Orthopedic Association and the American Academy of Orthopedic Surgeons. He is survived by a brother, Dr. John A. Sevier of Colorado Springs.

GEORGE H. STINE

Dr. George H. Stine, prominent ophthalmologist, died in Colorado Springs on April 9, 1952. He was born at Niagara Falls, New York, on September 13, 1897, and took his premedical work at Cornell University, his academic course being interrupted by service as an infantry officer in World War I. He graduated in medicine at the University of Buffalo in 1923, but soon after came to Colorado for his health. He was eventually able to resume his postgraduate studies, which culminated in an M.Sc. from the University of Pennsylvania in 1929. Since that time he has been engaged in the private practice of ophthalmology in Colorado Springs. Dr. Stine had a keen scientific mind and published considerable original work in his field, particularly on the localization of retinal detachments, a subject on which he was annually invited to give a lecture course by the American Academy of Ophthalmology. His scientific attainments were widely recognized, and his societies included the American College of Surgeons, the International College of Surgeons, and the American Association for the Advancement of Science. Dr. Stine is survived by his widow and two children.

UTAH
State Medical Association

HIDEO H. KATO

Dr. Hideo H. Kato, physician and psychiatrist, of Ogden, Utah, died March 27, 1952, after a short illness.

Dr. Kato was a graduate of the University of Louisville School of Medicine. He was born August 10, 1913, at Ogden, Utah.

Dr. Kato entered the United States Army in 1942 and served with the 82nd Airborne Division, participating in the Ardennes, Rhineland and Central Europe campaigns. He had been awarded three battle stars and one bronze arrowhead. He served for a time in the Army of Occupation. He was separated from active duty with the rank of Major.

Dr. Kato was a member of the American Medical Association, the Utah State Medical Association and the Weber County Medical Society. He was a member of the Ogden Chamber of Commerce. He was the first President of the Young Buddahist's Association of Ogden.

He is survived by his parents, Mr. and Mrs. Toshio Sakai Kato, three brothers and three sisters.

EUGENE H. SMITH

A beloved physician, Dr. Eugene H. Smith, whose years of work for little children was widely known, died March 29, 1952, after a brief illness.

Dr. Smith was born in Dexter, Iowa, July 20, 1877. He graduated from the Omaha Medical

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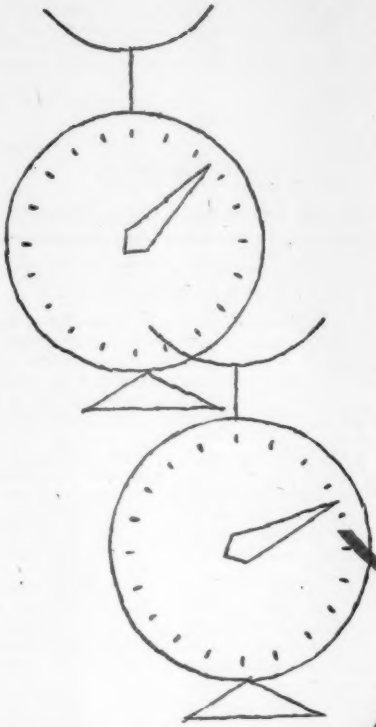

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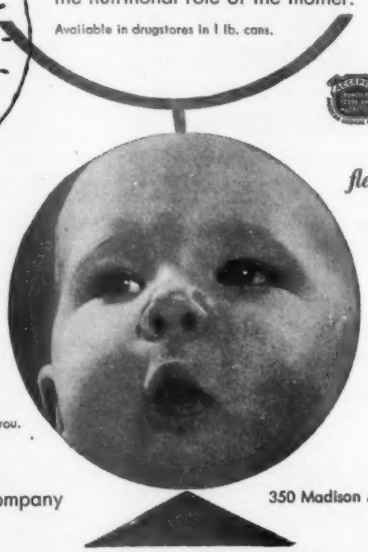

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2 Nesbit, H. T.: Texas State J. M. 38:551, 1943
3 Bull. National Research Council No. 119 Jan. 1950
4 Recommended Daily Dietary Allowances, Revised 1948, Food and Nutrition Board, National Research Council

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College of the University of Nebraska in 1901, when he moved to Rock Springs, Wyoming, where he had accepted the position of assistant surgeon for the Union Pacific Railway and Coal Company. Two years later he moved to Ogden, Utah, continuing in general practice until 1918. He became a member of the Red Cross Children's Bureau in France during World War I.

In 1913 and 1914 he specialized, doing post-graduate work in Boston, London and Vienna, and in 1925 began his practice as a pediatrician. For some time he was the physician in charge of rheumatic fever work for the Utah State Board of Health in northern Utah, and was a member of the faculty of the University of Utah Medical School from 1945 until his death. For twenty-five years he had been associated with the Children's Aid Society in caring for children, and in examining babies ready for adoption—a work he did without remuneration.

Dr. Smith was a member of the American Medical Association and the Academy of Pediatrics, Utah State Medical Association, Weber County Medical Association, and the American Heart Association.

Dr. Smith is survived by his wife, Mrs. Edith Smith, and two daughters.

COLORADO
State Health Department

FIVE-YEAR REVIEW OF THE CENTRAL CANCER REGISTER

A permanent file on more than 15,000 cancer cases was established at the Colorado State Department of Public Health during the period 1947-51 through required reporting of cases to the confidential Central Cancer Register by physicians, hospitals, convalescent homes, clinics and laboratories. The reporting was adopted in July, 1947, after conferences with representatives of the State Medical and Hospital Associations; reporting was widespread and continuous; and by the end of 1951 a fairly representative register had been accumulated. As of January 1, 1952, therefore, the reporting requirement was discontinued.

The reporting program, number of cases reported, and the statistical studies based upon the register are discussed in "Colorado Case Reporting and Central Cancer Register Statistical Studies, Five-Year Report, 1947-1951," recently prepared by the Research and Reports Service of the department. Mimeographed copies are obtainable either through the service or through the Chronic Diseases and Tuberculosis Section, under which the cancer control activities now are entered.

Approximately 3,500 cases were reported during 1947 and by the end of 1948 the total had risen to 7,500 patients, of whom 6,750 were Colorado residents. The reports received in 1947 and 1948 were used for two studies: "Twenty-One Hundred Cancer Cases—A Sample Study From the Cases Reported in 1947 to the Central Cancer Register," State Department of Public Health, July 1948, mimeographed; and "Cancer Illness Among Residents of Denver, Colorado, 1947," Cancer Morbidity Series, 4, 1951, Federal Security Agency, Public Health Service. The second study presents, in full, the findings in a complete survey of cases diagnosed or treated in 1947 in the Denver Metropolitan Area, including Denver, Adams, Arapahoe and Jeffer-

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Numerous authorities[1-12] recommend Thiomerin for home administration because it is as well tolerated and predictable in effect when given *subcutaneously*, as when given intramuscularly and intravenously. The technique of injecting Thiomerin Sodium may be quickly mastered.

Consequently, more and more physicians are finding that it is often desirable to instruct the patient or a member of his family in the use of Thiomerin so that injections between visits can be made on schedule—according to the dosage plan that best suits each patient.

A supply of *printed instructions for patients* will be sent to the physician on request.

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son Counties. Summaries from the two studies are included in the five-year review.

In January, 1949, a new file of records was started for routine monthly and annual tabulations of newly reported cases classified according to the county of usual residence and case characteristics. Aggregated statistics for the three years 1949-1951 are detailed in the five-year review and are briefly abstracted below.

	Males	Females
Total newly reported resident cases	4,790	4,881
Cases of all known ages	4,691	4,775
All ages	100.0%	100.0%
Under 5 years	.8	.6
5-24 years	1.9	1.6
25-44 years	8.9	14.5
45-64 years	35.9	40.5
63 and older	52.5	42.8

	State %	State No.	Denver Metro. Area*
Primary site distribution:			
All sites	100.0	9,671	4,925
Digestive system	26.8	2,588	1,244
Skin	13.0	1,254	643
Female organs	11.2	1,082	542
Breast	11.2	1,079	599
Respiratory system	7.3	703	356
Male organs	7.0	674	324
Oral cavity	5.8	566	314
Urinary organs	5.0	482	256
Nervous system	1.7	165	108
Other and unknown	11.1	1,078	539

*Denver, Adams, Arapahoe and Jefferson Counties.

Although complete reporting was not achieved, the cooperation of the physicians and hospitals was good, and the number of reported cases was sufficiently large to make the detailed statistics of considerable interest. Reporting apparently was somewhat more complete for residents of the Denver Metropolitan Area than for some other parts of the state where medical and diagnostic personnel and facilities are relatively lacking.

For a great many centuries tuberculosis has been regarded as a threat to life and to economic and social status. The disease still has the power of evoking severe anxiety. The campaign of health education which the National Tuberculosis Association has carried on for several decades is of great importance, but its effect is still pitifully small when measured against the mass of human experience and prejudice of the centuries.—Jerome Hartz, M.D., Pub. Health Reports, October 6, 1950.

Clinical medicine sees the cause of tuberculosis in the bacillus; but social medicine sees the cause of the bacillus in poor living and habitation.—John J. Sutter, M.D., The Ohio State Med. J., June, 1951.

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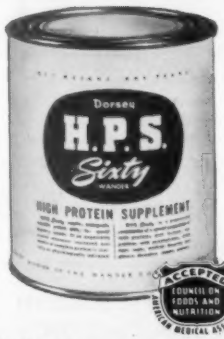

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CASE REPORT

Sepsis in a Premature Infant With Fatal Termination

Baby C was born 3/7/52 in a community hospital. The EDC was 5/8/52. The baby was one of twins and his birth weight two pounds eleven ounces. The pregnancy had been complicated by premature rupture of the membranes six days before delivery and the mother was given penicillin during this six-day period. Because the baby was considered to be in poor condition immediately after birth, he was placed in a Bloxsom Air Lock for an hour and then kept in an incubator. The following day the patient was transferred to the Premature Infant Nursery of the Colorado General Hospital for further care. At this time he was less vigorous than his twin sister, he was moderately jaundiced and was noted to have circumoral cyanosis on exertion. The temperature was 96.6 F. by rectum. Nose and throat cultures at this time yielded staphylococci and E. coli. The staphylococci did not produce coagulase, nor ferment mannite. The coli organism was resistant to penicillin but was sensitive to chloromycetin, streptomycin, and terramycin.

The baby was given oxygen as needed and started on feedings of 5 per cent glucose followed by a formula of half-skimmed cow's milk with 10 per cent added carbohydrate (by gavage). Oral feedings were supplemented by subcutaneous clyses as needed. On 3/11/52, he was noted to be more lethargic and a blood culture taken at this time grew E. coli. Other laboratory findings at this time were WBC 7400 with 44 per cent neutrophils; hemoglobin 18.0 gms; RBC 5.0 mill; urine normal.

Without waiting for the results of the blood culture, the possibility of sepsis was considered and the baby was given penicillin, 10,000 U. and streptomycin, 30 mg q 12 h. The following day the respirations became grunting in character and there was some hyperextension of the back and spasticity of the extremities. The muscle spasm did not respond to 5 c.c. of calcium gluconate intravenously. A lumbar puncture yielded bloody fluid with no growth on culture. The baby went downhill rapidly and expired the evening of March 12, 1952. Terminal artificial respiration, caffeine sodium benzoate (15 mgm s.c.) and intracardiac adrenalin were given without effect. Permission for autopsy was not obtained.

Diagnosis: Bacteremia, E. coli; premature birth; neonatal death.

Comment: This case is presented by the MCH Committee of the Colorado State Medical Society to emphasize some of the problems associated with infection in the newborn. Since it is well known that the newborn, and especially the premature infant, is unusualy susceptible to most infections, one must be constantly on guard to recognize the possibility of infection in any newborn who does not seem to be thriving. Newborns, particularly premature infants, with an overwhelming infection such as sepsis are:

Meat and its applicability in the Dietary Management of Atherosclerosis

Contrary to the former belief that serum cholesterol levels are primarily related to ingested animal fat and consequently to dietary cholesterol, it now appears that the total amount of fat in the diet, not its source or cholesterol content, is a more important factor in determining the blood cholesterol concentration.[1,2,3,4] Clinical observation has shown that ingestion of vegetable fat—which contains no cholesterol—will, like fats of animal origin, raise the serum cholesterol level.[3, 5]

Recent basic research on the influence of fats and cholesterol on human health has done much to further progress in the fight against atherosclerosis. It will serve well in dispelling the mistaken fear that reasonable amounts of foods of animal origin predispose the individual to this vascular disease.[6] As a matter of fact, a dietary inadequate in essential nutrients but providing too many calories and too much fat from *any* source may well be an important factor underlying the deposition of fat and cholesterol in the arteries and liver.

Cumulative evidence indicates that lowered blood levels of cholesterol may be effected by restricting the total fat intake.[1] Except in instances of refractory hypercholesteremia, in which a daily fat intake as low as 10 Gm. may not reduce cholesterol levels to normal, diets containing 20 to 30 Gm. of fat, or even more, often produce low cholesterol blood levels. In the clinical application of this principle, various palatable, low fat diets which supply three servings of meat daily (containing 18 Gm. of fat) have recently been suggested for the dietary management of arteriosclerosis and for enlisting the cooperation of patients.[1] The meat servings were chosen from a large variety of cuts and kinds of meat (fat trimmed off, as lean as possible). Meat adds to the eating appeal of the fat-restricted diet and contributes important amounts of biologically complete protein, the B group of vitamins including B_{12}, and food iron—all of which are important for a good state of nutrition in the atherosclerotic patient.

---

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1. Less apt to have an obvious primary focus of infection.

2. Less apt to show a septic temperature curve (may not have fever, but may have a leucocytosis).

3. More apt to have jaundice.

4. More apt to be infected with a "non-pathogenic" organisms (i.e., E. coli).

5. More apt to have a fatal termination.

The case in question illustrates several of these points. In spite of the fact that the baby seemed listless, it had a normal temperature for the first four days of life, and the organism isolated from the blood culture was E. coli (usually considered non-pathogenic).

In some premature infant nurseries, the procedure of administering antibiotics as a prophylactic measure is routine. In others, the antibiotics are given with the slightest provocation. In this case the premature rupture of the mother's membranes six days before delivery represents an obvious hazard for infection of the baby. It is regretted that this complication was not made known to the resident of the Premature Infant Center when the baby was first transferred there. This knowledge would have resulted in immediate administration of antibiotics and possibly blood transfusions (5-10 c.c./lb.).

The choice of antibiotics for newborns is as complicated as that for older children. Penicillin and streptomycin probably represent a good combination when one is not sure of the organism involved. They can both be given parenterally with minimal danger of reaction and together they cover a broad and anti-bacterial spectrum. Furthermore, they do not seem to be antagonistic to each other. Aqueous penicillin is preferable and in this case might have been given q 6 h, using same dose per injection. As has been shown by Dunham[1], Silverman, et. al.[2], and Todd[3], the bacteria commonly involved in sepsis of the newborn are staphylococci, E. coli, and streptococci.

This case is selected to illustrate the importance of keeping infection of the newborn in mind, even when there is no obvious external evidence of it. It is impossible to prevent the misfortune of rupture of the mother's membranes or premature delivery, but the institution of prompt measures to prevent or combat infection of this newborn, immature infant might have been life-saving. One is not justified in assuming that the pencillin given the mother for the six days before delivery would cross

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the placental barrier in sufficient quantity to benefit the fetus, Kitchen, D. K., et al.[4], even if its infection had been caused by a penicillin-susceptibe organism.

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BLUE CROSS and BLUE SHIELD

A total of almost twenty-four million dollars has been paid to hospitals for Blue Cross members' hospital care since the plan was inaugurated in Colorado in 1938, Joseph R. Grant, Executive Director of Blue Cross, reported to the organization's Board of Trustees at the fourteenth annual meeting.

Mr. H. E. Rice, Administrator of the Porter Sanitarium and Hospital, was elected Blue Cross President at the meeting and Glenn G. Saunders, representing Presbyterian Hospital, was elected Vice President. Joseph A. Craven was re-elected Secretary, and the retiring President, Dr. Lewis I. Miller, was elected Treasurer and Chairman of the Executive Committee.

Mr. Grant stated that there are now nearly 450,000 Blue Cross members in the state and that Colorado Blue Cross has the highest hospital admission rate of any plan in the nation, approximating 170 people out of every 1,000 members.

There were 66,661 Blue Cross hospital bills paid in 1951, with an average length of stay in the hospital for each patient of 6¼ days, amounting to approximately seven million dollars—four million dollars of which were paid to Denver hospitals.

Mr. Grant reported that 92 cents out of every dollar paid into Blue Cross was returned to Blue Cross members in the form of paid hospital bills. Maternity cases were still the leading cause of hospital care, with a total of 10,849 babies born to Blue Cross members in 1951.

St. Luke's Hospital led the Denver hospitals in the number of cases with a total number of 5,784 cases with billings in the amount of $717,-577.64. St. Joseph's Hospital was second with 5,712 cases, with billings of $682,233.00; General Rose Hospital had 5,142 cases with billings of $620,101.30; St. Anthony's, 4,807 cases with billings of $474,361.08, and Children's Hospital, 4,350 cases with billings of $321,333.00.

Statewide there were 39,144 hospital cases in the Denver area, 6,301 hospital cases in the Colorado Springs area, 6,909 cases in the Pueblo area, 1,331 cases in the Canon City area and 2,971 hospital cases on the Western Slope.

WANTADS

SAN LUIS, town of 1,500, located near beaulitful Sangre De Christo Range, needs general practitioner, preferably one who speaks Spanish. Draw practice from 6,000 to 7,000 people located within radius 30 miles. Committee of local citizens will assist doctor to set up practice. For details contact Mr. D. S. Salazar, P. O. Box 337, San Luis, Colo.

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FOR SALE—Complete office furnishing and equipment, including instruments, books, safe, etc. Dr. H. S. Scott is retiring. Please contact Dr. Scott, Utah Oil Bldg., Salt Lake City, for details.

Tuberculosis Abstracts

Issued Monthly by the National Tuberculosis Association

Vol. XXV MAY, 1952 No. 5

THE ABSORPTION, DISTRIBUTION, ERECTION AND SHORT TERM TOXICITY OF ISONICOTINIC ACID HYDRAZIDE (NYDRAZID) IN MAN

By DuMont F. Elmendorf, Jr., M.D., et al., The American Review of Tuberculosis, April, 1952.

Isonicotinic acid hydrazide (Nydrazid) has been demonstrated by Bernstein, et al., of the Squibb Institute to have a considerable and unique inhibitory effect on the growth of mycobacteria *in vitro* and to exert an impressive degree of antituberculous activity in experimentally infected mice. Systematic studies of the pharmacology of this compound were conducted by Rubin, et al., who defined the acute and chronic toxicities of the drug for several animal species. They found that isonicotinic acid hydrazide was well tolerated by dogs for periods of three to four months when administered orally in doses which provided theoretically effective concentrations in the plasma. As a consequence of these observations, an investigation in man of the pharmacodynamics and antituberculous activity of isonicotinic acid hydrazide was started in November, 1951, on the New York Hospital-Cornell Medical Service. Observations made in this study, on the pharmacology and toxicity of the drug when administered to patients with pulmonary tuberculosis, form the basis of this report.

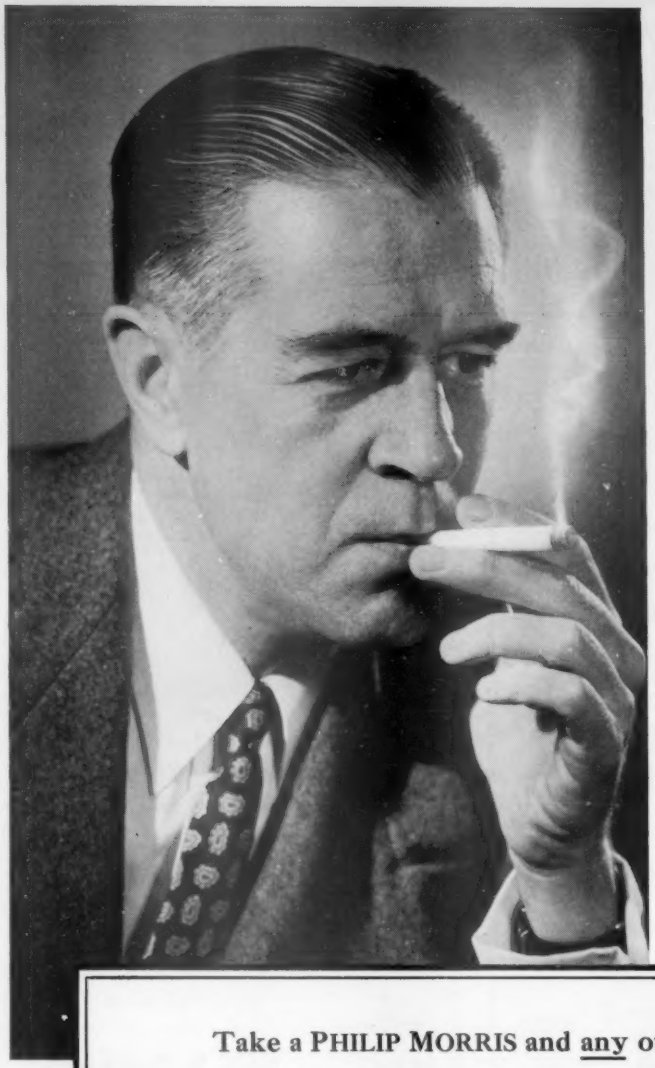
Patients. The patients chosen for study were all adults with pulmonary tuberculosis classified as far advanced or moderately advanced by the criteria listed in Diagnostic Standards of the National Tuberculosis Association (1950 edition). With a few exceptions the patients had had long courses of streptomycin and para-aminosalicylic acid (PAS) and were discharging tubercle bacilli which were insusceptible to streptomycin *in vitro*. The type and timing of the clinical, bacteriologic, and roentgenographic observations made of the course of the tuberculous infection during isonicotinic acid hydrazide administration were identical with those used in streptomycin and other chemotherapeutic studies.

Drug. The isonicotinic acid hydrazide* used was a highly purified crystalline powder incorporated into capsules containing 10.0 milligrams or 25.0 milligrams.

Dosage Regimen. For continued administration, the isonicotinic acid hydrazide was given orally in a total daily dose of 3 mgm. per killogram divided into two doses at approximately twelve-hour intervals. Deviations from this regimen were made in certain individual experiments.

On the basis of the observations it appears that isonicotinic acid hydrazide (Nydrazid) can be administered daily for periods of four to sixteen weeks to patients ill with pulmonary tuberculosis without evidence of serious toxic reactions. The daily dosage regimen (3.0 milligrams per kilogram) generally used in the present study was associated with plasma concentrations of the drug which are considerably above those in the reported therapeutic studies in mice. The biologic studies with plasma, cerebrospinal fluid and tubercle bacilli in the present investigation indicate that the isonicotinic acid hydrazide distributed in the plasma and cerebrospinal fluid of man is present in an active form in terms of antituberculosis activity *in vitro*.

It appears that from the standpoints of distribution, maintenance of antimicrobial activity and short-term tolerance, isonicotinic acid hydrazide in man displays properties which are highly desirable in an antituberculous drug.



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Summary

Isonicotinic acid hydrazide (Nydrazid) was well tolerated in man in daily oral doses of 3.0 milligrams per kilogram for periods of four to sixteen weeks. The drug was rapidly absorbed and a high percentage was excreted in the urine during the twenty-four-hour period after ingestion. Appreciable concentrations of the drug are present in the cerebrospinal fluid within three hours of an oral dose of 2.0 to 3.0 milligrams per kilogram in patients without meningitis. In patients with tuberculous meningitis the concentrations of drug in the cerebrospinal fluid after oral administration are substantially higher than the concentration necessary to inhibit *M. tuberculosis* H37Rv *in vitro*.

The administration of isonicotinic acid hydrazide for the four- to sixteen-week period on the 3.0 mgm. per kilogram daily dose has not been associated with any manifestations of drug toxicity in any of the patients studied. It is probable that with higher doses or more prolonged administration, evidences of toxicity may be encountered.

The period of study has been too short to permit any statements concerning the possible emergence of drug-resistant strains of *M. tuberculosis* in the patients who have received the drug.

Finally, though isonicotinic acid hydrazide possesses a high degree of activity against *M. tuberculosis* in animals and in the body fluids of man, it is not possible from the present observations to make any positive statement concerning the therapeutic value of this compound in the treatment of tuberculosis.

*Generously supplied as Nydrazid by E. R. Squibb & Sons, New York, New York.

The Book Corner

New Books Received

Surgery and the Endocrine System—Physiologic Response to Surgical Trauma—Operative Management of Endocrine Dysfunction: By James D. Hardy, M.D., F.A.C.S., Assistant Professor of Surgery, University of Tennessee Medical College. 153 pages with 43 figures. Philadelphia and London: W. B. Saunders Company, 1952. Price, $5.00.

Surgical Synecology — A Handbook of Operative Surgery — Including Important Obstetric Operations: By J. P. Greenhill, M.D., Professor of Gynecology, Cook County Graduate School of Medicine; Attending Gynecologist, Cook County Hospital; Attending Obstetrician and Gynecologist, Michael Reese Hospital. Illustrated by Angela Bartenbach. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago. Price, $8.50.

Allergic Pruritus — Its Dermatologic Management: By Stephen Epstein, M.D., Editor. Panel Discussion: Rudolf L. Baer, M.D.; Stephan Epstein, M.D.; Carl Laymon, M.D.; Francis W. Lynch, M.D.; Herbert Rattener, M.D.; Stephen Rothman, M.D.; James R. Webster, M.D. An official publication of the American College of Allergists, Inc. Bruce Publishing Company, St. Paul and Minneapolis, 1952. Price, $2.50.

Current Therapy 1952—Latest Approved Methods of Treatment for the Practicing Physician. Editor: Howard F. Conn, M.D. Consulting Editors: M. Edwards Davis, Vincent J. Derbes, Garfield G. Duncan, Hugh J. Jewett, William J. Kerr, Perrin H. Long, H. Houston Merritt, Paul A. O'Leary, Walter L. Palmer, Hobart A. Reimann, Cyrus C. Sturgis, Robert H. Williams. 849 pages. Philadelphia and London: W. B. Saunders Company, 1952. Price, $11.00.

Fundamentals of Psychiatry: By Edward A. Strecker, M.D., Sc.D., LL.D., Litt.D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, Undergraduate and Graduate Schools of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania, Philadelphia and Germantown Hospitals; Consultant and Chief-of-Service, Institute of the Pennsylvania Hospital; Consultant to the Surgeons General, U. S. Army and U. S. Navy, and formerly Consultant for the Secretary of War to the U.S.A.A.F.; Senior Consultant in Psychiatry, Veterans' Administration; Consultant in Mental Hygiene, U.S.P.H.S.; Chairman, Committee on Psychiatry, National Research Council; Chairman, Committee on Psychiatry, American National Red Cross. Fifth edition, 21 illustrations. Philadelphia, London, Montreal: J. B. Lippincott Company. Price, $4.50.

Histopathological Technic—Including a Discussion of Botanical Microtechnic: By Aram A. Krajian, Sc.D., formerly in Department of Pathology, Los Angeles County General Hospital, Los Angeles, Calif. And R. B. H. Gradwohl, M.D., Pathologist to Christian Hospital; Director, Gradwohl School of Laboratory and X-Ray Technique, St. Louis, Mo. Second edition, with 131 text illustrations and seven color plates. St. Louis: The C. V. Mosby Co., 1952. Price, $6.75.

Book Reviews

Diagnosis and Treatment of Menstrual Disorders and Sterility: By Charles Mazer, M.D., F.A.C.S., formerly Associate Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania; Attending Gynecologist, St. Agnes Hospital; Consulting Gynecologist, Mount Sinai Hospital, Philadelphia. And S. Leon Israel, M.D., F.A.C.S., Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania; Attending Gynecologist, Mount Sinai Hospital, Philadelphia. Third edition, revised; 137 illustrations; 583 pages. New York: Paul B. Hoeber, Inc., 1951. Price, $10.00.

To bring their work, "The Diagnosis and Treatment of Menstrual Disorders," up to date in the third edition, Drs. Mazer and Israel have revised extensively. New topics included in the third edition are: intraepithelial carcinoma of the cervic, clinical role of the vaginal smear, genesis of the menopausal syndrome, medical treatment of endometriosis, and role of luteotropic hormone in menstruation.

The book continues to show the authors' interest in endocrine therapy. The use of natural estrogens in contrast to the synthetic is noted. Their defense of the low dosage x-ray over the ovaries and pituitary in the treatment of a variety of gynecologic disorders is summarized.

The wide popularity of this book is based on its clinical approach. Theory is avoided and practical personal experience in effective therapy is stressed. Now up to date, this convenient guide can prove useful and instructive frequently.

G. T. FOUST, JR., M.D.

Plastic Surgery of the Nose: Including reconstruction of war injuries and of deformities from neoplastic, traumatic radiation, congenital and other causes: By James Barrett Brown, M.D., Professor of Clinical Surgery, Washington University School of Medicine, St. Louis; Chief Consultant in Plastic Surgery, U. S. Veterans Administration, Washington, D. C.; formerly Senior Consultant in Plastic Surgery, United States Army, and in E.T.O.; and Chief of Plastic Surgery, Valley Forge General Hospital. And Frank McDowell, M.D., Assistant Professor of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo. 379 illustrations, 48 in color. 427 pages. St. Louis: C. V. Mosby Company, 1951. $15.00.

There is a great need for a book on plastic surgery of the nose which would be of practical value to the otolaryngologist and plastic surgeon as well. This book does not fill that need. It is not erudite enough for the well-trained specialist nor is it fundamental and detailed enough in its information to act as a guide for the beginner. It really has little in it that wasn't in former books on this subject printed many years ago.

The book has lots of photography, all kinds, good and bad, but unfortunately not uniform as to backgrounds, positions or lighting, so it does not offer much of value for a study of "before and after" pictures.

There is very little attention paid to physiology of the nose. In this, the book shows a common fault with most textbooks on the subject of plastic surgery of the nose. As the book is written by two very eminent plastic surgeons of great ability and experience, it is fair to surmise that plastic surgeons as a rule are not much interested in the physiology of the nose but rather emphasize the cosmesis angle. Both, of course, are important and it is to be hoped that someone some day will write a book with particular attention to these two aspects. Unfortunately, this book does not come up to that standard.

IVAN W. PHILPOTT, M.D.

COLORADO
Medical School Notes

THIRD ANNUAL COLORADO INTERN-RESIDENT CLINICS

The Third Annual Colorado Intern-Resident Clinics will be held on June 4 and 5, 1952, at the University of Colorado Medical Center, 4200 East Ninth Avenue, Denver. The program has been designed for the special interest and benefit of all interns and residents in this area and has been arranged by their own committee. House staff members participating in the program are drawn from the University of Colorado Medical Center teaching hospitals, from affiliated private hospitals, and from the military and Veterans' Administration hospitals.

The morning sessions will consist of clinical discussions. In the afternoons, papers reporting original investigations will be presented by members of the house staffs. Many of these papers will represent work done toward a Master of Science degree.

The guest clinician will be Dr. Tinsley R. Harrison, Professor of Medicine at the Medical College of Alabama. On the evening of June 4, he will deliver the Third Annual Intern-Resident Lecture. His subject is, "Some Theoretical and Practical Applications of the Electrokymogram and the Ballistocardiogram."

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